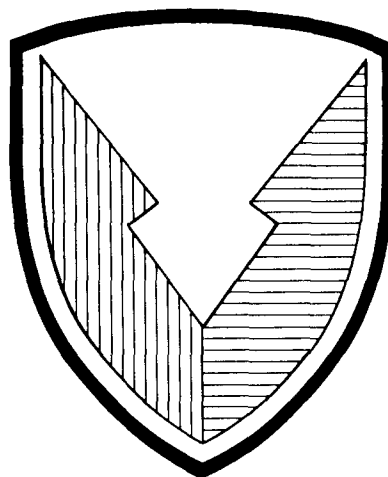


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U.S. Army
Materiel Command

ANNUAL HISTORICAL REVIEW FY89



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ANNUAL HISTORICAL REVIEW

FISCAL YEAR 1989

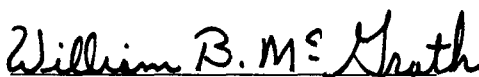
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Prepared By

Historical Office
Headquarters, U.S. Army Materiel Command

March 1991

APPROVED:



WILLIAM B. McGRATH
Major General, USA
Chief of Staff

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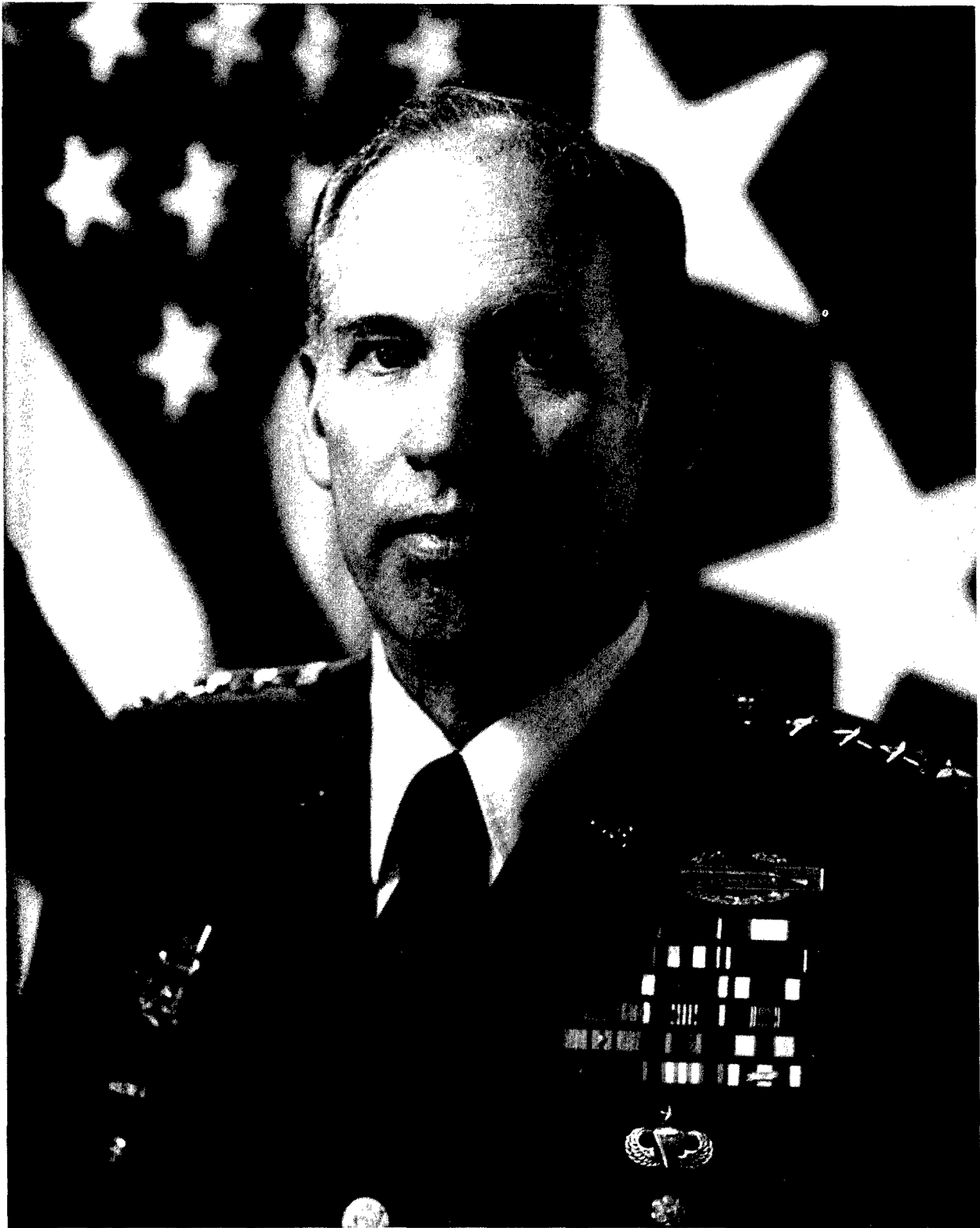
Preface

This Annual Historical Review (AHR) of the Headquarters, U.S. Army Materiel Command during fiscal year 1989 was prepared by HQ AMC's Historical Office largely based on submissions from staff elements, supplemented by documents received from them and documents already held in HQ AMC Historical Office archives. This AHR, covering the twenty-seventh anniversary of AMC, prepared according to AR 870-5, owes much to the individuals of the Command who provided the materials and data covering the activities of their staff elements. Without their reports and without the efforts of the historians who used the reports, this AHR could not have been completed.

The Annual Historical Review serves as a chronicle of the Command, to be used as a statement of the events of the year by those needing to look at the past to better manage the present and project the future. The soldiers and civilians of the Army Materiel Command, both at HQ AMC and in the field, carry a heavy responsibility supporting the soldier. This study documents their efforts. Also included is a chapter on General Louis C. Wagner, Jr.'s stewardship of AMC in 1989.

Preparation of the Annual Historical Review was a team effort, accomplished under the supervision and guidance of the Chief Historian. Assisted by Mr. Marcel Coppola, historian-archivist, in the use of documents, Dr. Herbert Leventhal wrote the chapters on materiel acquisition and materiel readiness, and Dr. Charles Johnson wrote the chapter on resource management. Mr. Coppola also completed the also completed the chapter on security assistance/foreign military sales. Diane Donovan, Assistant Editor, completed the final preparation of this report.

Robert G. Darius
Chief, Historical Office



General Louis C. Wagner, Jr.
Commanding General
To 26 September 1989



General William G. T. Tuttle, Jr.
Commanding General
From 27 September 1989



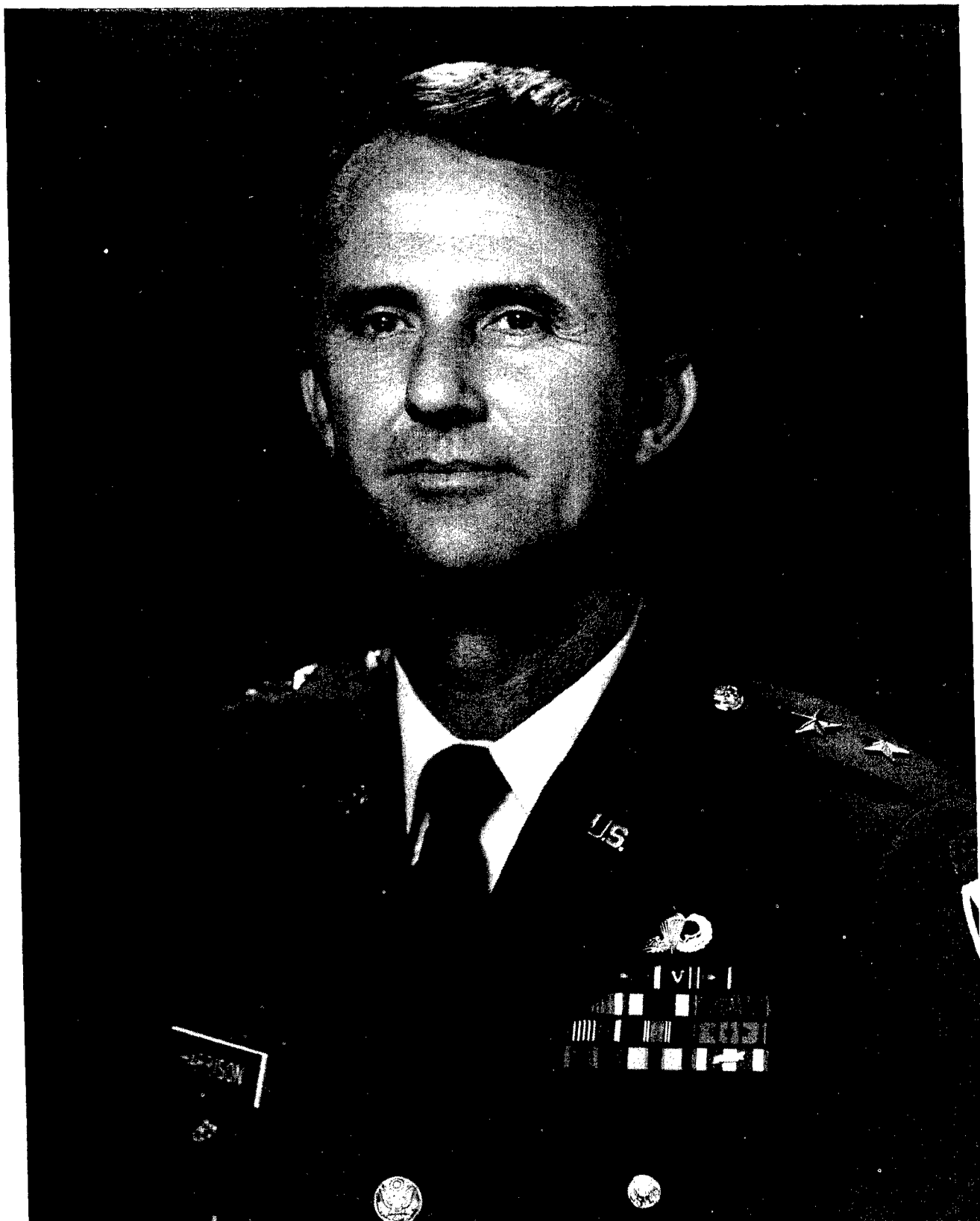
Lieutenant General Jerry M. Bunyard
DCG for Research, Development & Acquisition
DCG for International Cooperative Programs
Army Executive Agent for RDA



Lieutenant General Fred Hissong, Jr.
DCG for Materiel Readiness
Executive Director for Chemical & Nuclear Matters
Executive Director for TMDE
Executive Director for Conventional Ammunition



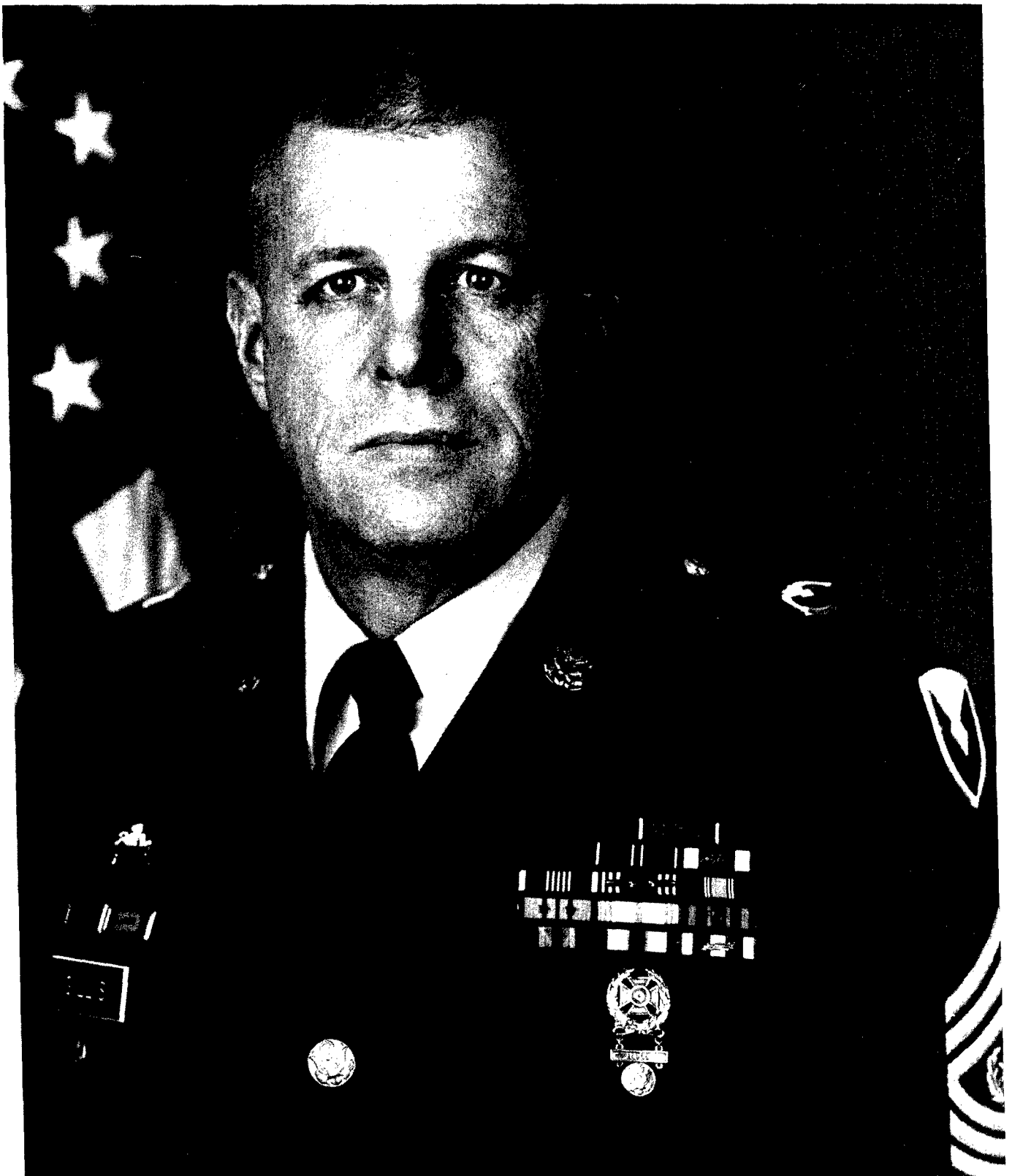
Dr. Robert Chait
Chief Scientist



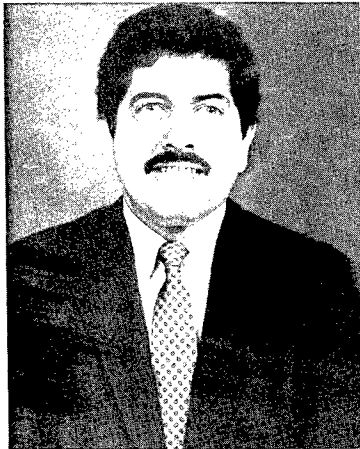
Major General Jerry C. Harrison
Chief of Staff



CSM William B. Tapp, Jr.
Command Sergeant Major
To 16 February 1989



CSM John W. Gillis
Command Sergeant Major
From 17 February 1989



Mr. Stanley J. Alster
Special Assistant for
Total Quality Management



BG Terrence L. Arndt
DCS for Resource Mgmt
To 31 July 1989



Mr. Robert O. Black
Deputy for Research,
Development & Acquisition
To 2 July 1989



COL John R. Bramblett
Chief, Project Mgmt Office



Mr. Paul Donovan
Deputy, U.S. Army
Security Affairs Command



Mr. Robert K. Dubois
Deputy Executive
Director for TMDE



Mr. Bryant R. Dunetz
Asst Deputy, International
Cooperative Programs



Mr. Michael F. Fissette
Deputy PEO Ammunition



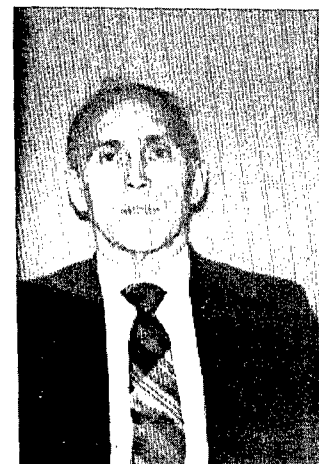
BG Waldo D. Freeman, Jr.
PM, SANG Modernization



COL Donald W. Gover
Chaplain



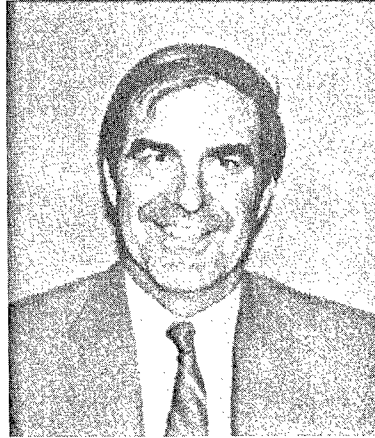
MG Paul L. Greenberg
DCS for Ammunition



Mr. Darold L. Griffin
DCS for Production



COL Lewis R. Heffner
Commandant, Headquarters
Installation Support Activity



Mr. Richard E. Heinbach
Asst Deputy for
Materiel Readiness



Mr. James C. Hill
Director, Logistics Mgmt



BG Nicholas R. Hurst
DCS for Procurement



Mr. George L. Jones
ADCS for Personnel



Mr. Edward J. Korte
Command Counsel



MG Eugene B. Leedy
DCS for Supply,
Maintenance & Transportation
To 25 September 1989



MG Thomas G. Lightner
Commanding General
U.S. Army Security
Affairs Command



Mr. Seymour J. Lorber
DCS for Product
Assurance & Testing



Mrs. Maureen Miller
ADCS (DEA) for
Program Management
From 25 December 1988



Mr. A. David Mills
ADCS for Supply,
Maintenance & Transportation



MG Charles M. Murray
DCS for Supply,
Maintenance & Transportation



BG Malcolm R. O'Neill
DCS for Technology
Planning and Management
Commander, LABCOM



Dr. Kenneth Oscar
Assistant DCS (DEA)
for Acquisition Management



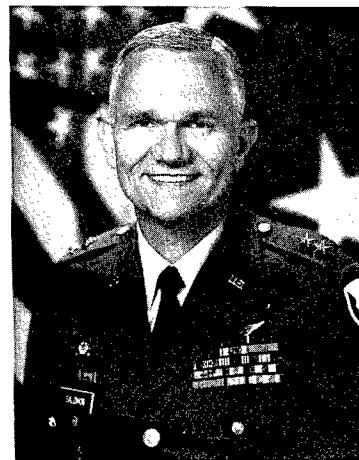
COL Kenneth W. Pastore
U.S. Air Force
Deputy Executive Director
For Conventional Ammunition



BG Virgil Amos Richard
DCS for Resource Management
From 14 September 1989



MG Joe W. Rigby
DCS for Development,
Engineering & Acquisition



MG Leon E. Salomon
DCS for Readiness



Mr. Michael C. Sandusky
DCS for Program
Analysis & Evaluation



Mr. Gary E. Tagtmeyer
ADCS for Resource Mmgt



COL James L. Tierney
Inspector General



Mr. Robert O. Weidenmuller
ADCS (DCS for RM)
For Cost Analysis



MG Albin G. Wheeler
DCS for Personnel



COL Gifford D. Wilson
DCS for Mgmt & Productivity
To 21 November 1988

Key Personnel Not Pictured:

Dr. Robert G. Darius	-- Chief, Historical Office
COL Victor J. Fenwick, Jr.	-- Deputy Executive Director for Chemical & Nuclear Matters
Mr. William M. Ferron	-- ADCS for Management & Productivity
COL David W. Garner	-- DCS for Management & Productivity, from 21 November 1988
COL Ralph C. Gauer	-- DCS for Intelligence
COL Jerry A. Hubbard	-- DCS, Engineering, Housing, Environment & Installation Logistics
COL James P. Hunt	-- Commandant, HQ Installation Support Activity, to 31 May 1989
Mr. David H. Keller	-- ADCS, Engineering, Housing, Environment & Installation Logistics
COL Richard J. Lunsford, Jr.	-- PM, Training Devices
Mr. Leonard Maguire	-- Chief, Internal Review & Audit Compliance Office
COL Duane H. Myers	-- ADCS for Program Analysis and Evaluation
Ms. Marilyn Scarbrough	-- Chief, Office of Equal Opportunity, from 24 August 1989
COL Garry A. Scharberg	-- Assistant Chief of Staff
COL George E. T. Stebbing	-- Surgeon, from 24 October 1988

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Chapter I

Command Management

General Louis C. Wagner, Jr. assumed command of AMC on 14 April 1987 and served until 26 September 1989, virtually the end of FY89. This command synopsis, therefore, serves as a platform to overview his entire two and one-half year tenure as AMC commander.

General Wagner, an armor officer who had served as Commanding General, U.S. Army Armor Center/Commandant United States Army Armor School, came to AMC with an equally strong background in the research and development aspect of materiel development and management. His career in the research and development arena included tours as test officer and Chief of the Armor Test Division at the U.S. Army Arctic Test Center in the mid-1960s; staff officer in the Weapons System Analysis Directorate of the Office of the Assistant Vice Chief of Staff of the Army in the early 1970s; several positions with the Army Materiel Acquisition Review Committee (AMARC), culminating with that of Special Assistant for AMARC in the mid-1970s; and several positions on the staff of the Army's DCS for Research, Development and Acquisition (DCSRDA) in the late 1970s and early 1980s. Immediately prior to assuming command of AMC, from August 1984 to April 1987, he served as the DCSRDA.¹

Acquisition

Project Management Restructuring

As DCSRDA General Wagner had already been involved in one of the major issues to confront AMC during his command--the restructuring of project management. Since its creation AMC had managed the major weapon system research and development programs for the Army by using project managers (PMs). However, the Army's implementation in 1987 of the report of the Packard Commission, *A Quest for Excellence: Final Report by the President's Blue Ribbon Commission on Defense Management* (June 1986), removed the major project-managed weapon system acquisition programs from the direct control of AMC and placed them, with their PMs, under an entirely new structure, placing AMC in a support role. The programmatic authority over the PMs was vested with Program Executive Officers (PEOs) who reported directly to the Army Acquisition Executive, created as a high level post within the Army Secretariat.²

¹See AMC, Oral History Program-Former Commanders, *General Louis C. Wagner, Jr., Commander, 14 April 1987 - 26 September 1989* (AMC, 1990), pp. 93-95. Hereafter cited as GEN Wagner Interview, HQ AMC, 14 Apr - 26 Sep 89.

²For the history of project management in AMC through the implementation of the Packard Commission report, see draft study by Herbert Leventhal, "Project Management in the Army Materiel Command, 1962-1987."

General Wagner had not wanted such a sharp change in AMC's role in major system acquisition. Instead, he advocated a method of complying with the Packard Commission report that essentially agreed with that of the preceding AMC Commander, General Richard H. Thompson, that the AMC MSC Commanders be dual-hatted as the PEOs. This approach, as well as a variety of others,

... were eventually presented to the Secretary of the Army and the Under Secretary of the Army, Mr. Marsh and Mr. Ambrose. Mr. Ambrose had the greatest influence on the final decision. He developed the PEO concept in a manner that he believed was the best way to reorganize military acquisition. The Chief of Staff and Secretary of the Army both made it very clear that they expected me to be responsive and enthusiastic in the adoption of the PEO implementation plans that were finally approved by the Secretary of the Army.

But they also made it very clear that they considered this Step I in the reorganization of acquisition in the Army Materiel Command and that there would be changes as we went along. I would have said, "I don't want the job," if they had said, "You're going to go down there and implement this whether it is right or wrong."³

Approximately five months after assuming command, General Wagner promulgated a guidance statement in which he set forth his policy on AMC's place in the new PEO/PM structure and the important role which it continued to play in the overall Army acquisition program. This memorandum was published in September 1987 in order to "articulate, clarify and implement the Secretary of the Army (SA) directive and Under Secretary of the Army (USA) guidance to implement the PEO management system." The memorandum made a variety of significant points. It stated that the PEO system:

Moves HQ AMC and the MSC out of the sequential review and decision process on programmatic issues (cost, schedule, performance) to a role where they can directly impact deliberations leading to acquisition decisions. HQ AMC and the MSC, working in concert with the PM they support and PEO, will help prepare well-considered, well-coordinated packages for the AAE [Army Acquisition Executive] to review. This will get everyone on the same vehicle at once, eliminating the delays of back-and-forth "clarification" trips. This change in modus operandi is a major aspect of the Army Streamlined Acquisition Process (ASAP).⁴

AMC and its MSCs were to provide "programmatic advice and assistance, but . . . not approve or concur in programmatic decisions." That authority was to rest only in the AAE/PEO/PM chain. AMC was, however, to continue to establish guidelines "and approve compliance with functional standards established by regulation, SA directive, or law." This included functional standards established in AMC regulations, although many of them were to become ARs as they were updated. Considered the equivalent of these functional standards were the policies for across-the-board programs such as the Army Streamlined Acquisition Process, Design to Cost, Design for Discard, and type classification.⁵

The functional areas in which AMC would continue to have primary authority even under the PEO concept included integrated logistics support, engineering, test and evaluation, procurement, financial management, cost and economic analysis, personnel management, master planning, facility design review,

³GEN Wagner Interview, HQ AMC, 14 Apr 87 - 26 Sep 89, pp 1-3.

⁴Memorandum for Distribution, 8 Sep 87, subj: Program Executive Officer (PEO) Management Guidance.

⁵Ibid.

capstone policy, guidance for developmental and non-developmental item (NDI) acquisition, budget formulation, safety, production, MANPRINT (Manpower and Personnel Integration), and intelligence.

Under the guidance statement, the PEOs were expected to function as external buffers and communications conduits for the PMs. As far as AMC was concerned, the PEOs would negotiate with the MSCs for functional support and would provide information on the progress and status of the PMs' programs to AMC.

In this realignment, AMC and its MSCs were to maintain a variety of major acquisition functions. This included providing extensive support to the PMs as needed, participating in the development of key acquisition documents, providing total program management and decision authority for all non-PEO managed acquisition programs and for tech base⁶ program management, and providing input and recommendations on a variety of areas for the AAE/PM/PEO decision chain. In addition, the MSC Commanders were given the job of serving as the head of contracting agency (HCA) for PMs located at their bases and they also continued to serve as the principal AMC Mission Area Managers for development with the U.S. Army Training and Doctrine Command of the materiel development objectives.⁷

Materiel Acquisition Review Boards (MARBs) were to be held, in the words of the CG's guidance, "for the purpose of reviewing and crosswalking documentation and developing a coordinated materiel developer (MATDEV) position." The MARBs were to be jointly chaired by the PEO and the MSC Commander, but the PEO was to have the lead and final decision authority on programmatic issues. In-Process Reviews (IPRs) for PEO programs also were to be chaired by PEO and MSC personnel jointly, and the MSC was not to delegate its authority to the PEO. Final decisions, that is, system acquisition decision memoranda, were to be signed by both the PEO and MSC Commander prior to being forwarded to the TRADOC proponent commander for signature. The PEO, however, was to have the lead and final decision authority on programmatic issues.⁸

General Wagner stated two principles that were to guide all AMC interactions with the PEO system: first, there was to be real-time, joint, cooperative, parallel participation of HQ AMC and the MSC with the PEO and PM in lieu of layered coordination, and second issue resolution would be accomplished at the lowest possible integrated level and functional stovepiping would be avoided.⁹

One additional item of importance covered in General Wagner's memorandum concerned the transition of programs from PEO to MSC control. The general rule had been that at some point most PMs would go out of existence, and that support for the fielded item would devolve upon the appropriate MSC.¹⁰ Now, however, the PEOs and PMs were to maintain responsibility throughout the entire life cycle of their assigned programs. "[T]otal transition to an MSC in the traditional sense will not occur." After the item

⁶Under the Army Management System. This included basic research (program category 6.1), exploratory development (program category 6.2), and advanced development (program category 6.3a).

⁷Memorandum for distribution, 8 Sept 87, subj: Program Executive Officer (PEO) Management Guidance.

⁸Ibid.

⁹Ibid.

¹⁰See AMC AHR for FY85, pp. 196-97.

was fielded, the MSC would provide more routine support for the system, while "PEO and PM staffs will be reduced to an appropriate level commensurate with their management oversight responsibilities."¹¹

Early in FY88 General Wagner restated the need to cooperate and work with the PEOs/PMs when, as part of *The Commander's Perspective*, he stated:

As the PEO/PM concept continues to mature, AMC must remain open to change and must contribute as a full partner with the PEO's and their PM's. We must continue to improve our functional support for them. We are a team that will take equal responsibility for the problems we encounter and solve them together; it is our job. I want each of you to accept responsibility for the actions of our PEO/AMC team--be proud when the team does well and stand accountable when it errs.¹²

Actual implementation of the AAE/PEO/PM concept occurred on 1 May 1987 when all but 14 AMC-owned PM programs were transferred from AMC to the AAE and PEOs.¹³ The 14 remaining PMs and the organizations they reported to are listed below.

TABLE I--AMC PM Programs as of 1 May 1987

<u>Program</u>	<u>Reporting Headquarters</u>
Anti-Armor Support Platform/Armored Gun System	TACOM
Boresight Devices	AMCCOM
Light Armored Vehicles	TACOM
Saudi Arabian National Guard Modernization Program	USASAC
Training Devices (TRADE)	HQ AMC
Armored Training Devices	PM TRADE
Army Communications Systems	PM TRADE
Aviation Training Devices	PM TRADE
Ground Forces Training Devices	PM TRADE
Test, Measurement and Diagnostic Equipment	HQ AMC
Automatic Test Support Systems	PM TMDE
TMDE Modernization	PM TMDE
Test Program Sets	PM TMDE
Topographical Support Sets	TROSCOM

Source: Historical Submission, Office of Project Management, FY87.

Obtaining the support of the AMC staff in the role of a coordinating helper rather than as a grader and approver of field activities was key to the success of the new system. In retrospect, General Wagner indicated his belief that he had succeeded in obtaining this support and in changing the way the headquarters related to the field, although he acknowledged that not everyone had been convinced.

¹¹Memorandum for Distribution, 8 Sep 87, subj: Program Executive Officer (PEO) Management Guidance.

¹²"The Commander's Perspective," FY88, as reprinted in the AMC AHR for FY88, p. 4.

¹³Historical Submission, Office of Project Management, FY87.

I would not say that I have been 100 percent successful in convincing the AMC staff to accept this change. Incidentally, that's not to be unexpected. Anytime there is a major change in the way you do business, it's difficult to get everyone to agree with it, particularly when they have been doing business a certain way for many, many years. Everyone has his own pet rocks--his own way of doing business--and I think his own protective mechanisms to protect his position, his job and his people.

I personally believe that I have the majority of the senior people in the Army Materiel Command aboard. At least they give me that indication. It is when you get to the middle level managers that you have the greatest difficulty in getting them to buy into a new system because they feel insecure anytime there is a change in the way they do business.

They felt very secure in AMC Headquarters, in sitting back and being the graders and checkers of all of the products that came in from the field. The concept that I stressed when I came here was that the AMC Headquarters should be a headquarters to support the field, not to be a grader, a checker and stumbling block in the process of moving a PM's program through the decision cycle.

As the people who were here at the time know, when I came here I said, "We're going to change the way we do business. We're going to get in on the front end of the development of the program and help the people in the trenches." That means to help the MSCs and the PM shops do their jobs better.

There is no question that we have some of the most outstanding people in the Army or in any part of DOD at AMC Headquarters, whether it be in production, acquisition planning, cost estimating, or any other area of expertise. On the other hand, they are not mentoring and teaching others in AMC how to do their job better if they don't go out and help on the front end.

That was not the way we did it before. Major Subordinate Commands spent a great deal of time putting together acquisition programs in isolation. They would then bring it up here and we would say, "This is what's wrong with it. Go back and do it again." Every one of those times that they brought it up here and took it back took time.¹⁴

After pointing out that he had gotten many in the headquarters to go out in the field and help people learn to do it properly, General Wagner stated that this effort was successful because "I know the number of times they [MSC staff] come through here and DA before they're approved has been cut probably in half or more. When they come up now they usually sail through, because a lot of work has gone in on the front end." He did acknowledge, however, that "there are still people here who I don't believe are being utilized up to their capabilities because they still want to be graders. It's going to take time to totally change their way of thought and the way they work with people in the field."¹⁵

The Under Secretary of the Army announced several organizational changes resulting from the Program Manager (PM) Scrub Task Force. The Under Secretary established a manpower baseline for each PEO/PM which submitted an implementation plan with detailed manpower audit trails, a Total Army Authorization Documentation System (TAADS) and schedules. Other organizational changes included redesignating PEO Close Combat Vehicles as PEO Heavy Force Modernization (HFM); disestablishing PEO Chemical-Nuclear

¹⁴GEN Wagner Interview, HQ AMC, 14 Apr 87 - 26 Sep 89, pp. 8-9.

¹⁵Ibid., pp. 9-10.

and PEO Troop Support; and planning for establishment of a new organization, Army Management Support Activity (AMSA), effective 1 January 1990. All PEO/PM resources were to transfer to the command and control of the Secretary of the Army for Research, Development, and Acquisition (SARDA) organizations with AMSA providing support.

Defense Management Review

In July 1989, under a new Presidential Administration and a new Secretary of Defense, the Office of the Secretary of Defense (OSD) published the initial taskings of what was called the Defense Management Review (DMR), a comprehensive inquiry into ways DOD and the services could better and more efficiently perform their mission of national defense, particularly as it concerned materiel development and acquisition.¹⁶ As part of the process and in anticipation of the taskings, the Army formed the Army Management Review Task Force, which among its taskings to various Army elements charged AMC with responding to a set of 14 explicit tasks, primarily organizationally related. On 27 June 1989 General Wagner in turn convened a three-team (management, logistics, research and development) task force led by a General Officers/Senior Executive Service (GO/SES) steering committee and carried forward through the daily ministrations of an executive group.

General Wagner viewed DMR as an opportunity to describe for the decision makers how AMC could improve its efficiency. He knew it was "not easy to make changes in the Army Materiel Command, because every time we try to make a change, particularly if it involves base closure, if it involves moving people from one place to another, or if it involves consolidating installations, we find it very difficult to achieve."¹⁷

The approach that AMC followed relative to the DMR was to rethink the problem that was presented, because all of the realignments or personnel cuts that could be made would not result in a command able to perform its mission. Working as much within the framework of the taskings as this approach permitted, the AMC task force followed a strategy of attempting to downsize its industrial base, reduce the number of its commodity commands, and seek opportunities in policy or programmatic changes to reduce expenses. Also, AMC was to identify to the Army Management Review over 8,000 spaces to be eliminated. The AMC task force submitted its report to the Army on 15 August 1989 and with certain modifications it became part of the Army response to OSD on 16 October 1989.

At the AMC headquarters level, a separate taskforce looked at ways the headquarters could be streamlined to perform its tasks more efficiently. The initiative sought to refocus on the essential responsibilities of a command headquarters and to identify manpower working in marginal activities, possibly those matters already under the purview of subordinate AMC activities, or that otherwise provided no "value added" to the accomplishment of AMC missions. The initiative generated recommended savings of 267 civilian and 38 military spaces to be achieved by the end of FY92.

In developing recommendations for this initiative, the Headquarters AMC Streamlining Team relied heavily on an organizational/operational concept approved by the AMC Command Group in July 1989 and on the findings of a "value added" study conducted earlier by the DCS for Management and Productivity.

¹⁶Dick Cheney (Richard B. Cheney, Secretary of Defense) *Defense Management: Report to the President*, July 89.

¹⁷GEN Wagner Interview, HQ AMC, 14 April-26 September 1989.

Implementation of streamlining recommendations and further refinement of HQ AMC operations was expected to extend through FY90.¹⁸

Other Acquisition Matters

Arguably the most important tasks for General Wagner in the acquisition arena, and perhaps overall, were adapting AMC to its role in the new AAE/PEO/PM acquisition world and providing input to the Army and the Department of Defense for the Defense/Army Management Reviews which were to chart the next steps in acquisition reform and the future of AMC.¹⁹ While that was going on, however, the "routine" business of AMC was still being accomplished, and a number of major accomplishments in various areas occurred in this period.

Significantly, in his Commander's Perspective General Wagner discussed research and development as a supplement of "Supporting the Ready Force." He stated:

AMC's role as the materiel developer begins in our laboratories and research, development and engineering (RDE) centers. Our efforts here must be responsive and focus directly on producing products and on exploiting proven technology that we can apply to systems that meet our warfighting needs. By doing so, we can field systems in a timely manner. At the same time, we must achieve a delicate balance that allows for innovation in our laboratories and RDE centers. We want to attract, challenge and retain quality scientists, engineers, managers and technicians.

We must also remember that we are part of a research and development community that includes industry, academia, our sister services, other government agencies and our allies. We must take full advantage of all opportunities to exchange ideas and share progress. We must not allow ourselves to fall victim to the "not invented here" syndrome or to be perceived that way.

Maintaining a robust research and development program, while simultaneously procuring the systems essential to our country's defense, means making some tough decisions. We must always remember that the research being done today will yield superior weapons and equipment for the Army tomorrow.²⁰

In the area of research and development support to the field a number of contributions were made, including both specific devices and improved organizational structures. Special Technology Offices were established at LABCOM in order to focus intensively upon and produce payoffs in the battlefield in both the near term and the 21st century. These offices provided more visible and strengthened management of

¹⁸Memorandum, LTG Bunyard for the Acting ASA(RDA), 6 Sep 89, subj: Program Executive Officer (PEO) Resource Support System Changes; Memorandum, LTG Bunyard for the Acting Assistant Secretary of the Army (RD&A), 12 Sep 89, subj: Army Acquisition Executive Officer (AAE) Decision Memorandum, PEO Support System Changes; COL Robert D. Mortig, Director, Acquisition and Industrial Base Policy, HQDA, for Distribution, 8 Sep 89, subj: Army Acquisition Executive (AAE) Decision Memorandum, PEO Resource Support System Changes; Ltr, GEN Wagner to Secretary of the Army, 8 Sep 89.

¹⁹For General Wagner's comments on the Defense Management Review, see GEN Wagner Interview, HQ AMC, 14 April-26 September 1989, pp. 55-58. An assessment of the Defense Management Review and of AMC's role within it cannot be made at this time since the DMR process is still ongoing and most of the documentation and personal recollections dealing with it are not yet available for use by the Historical Office.

²⁰"The Commander's Perspective," reprinted in the AMC AHR for FY88, p 3.

especially critical and complex technologies that crossed discipline and mission area lines. The Special Technology Offices did so by planning research and development programs, evaluating and assessing technology opportunities, demonstrating advances, providing advice, disseminating information, and facilitating the integration of advances into ongoing research and development programs.²¹

In 1988 an initiative was begun to improve the integration of research, development and acquisition programs across mission areas. This would help the Army to make smarter and better-informed decisions when building the Long Range RDA Plan and when conducting decrement exercises. This was done by providing an automated quick reaction capability for use during decision meetings that would expose many of the normally hidden impacts on and among systems that occurred when funding changes were made.²²

A Combined Arms and Plans Team was established and charged with integrating, developing, managing, and planning Combined and Multiple Arms concepts.²³

Efforts were also made to bridge the gap between emerging technologies and their impact on the battlefield of the future by holding a joint AMC/TRADOC meeting of TRADOC combat developers and principals from AMC laboratories and centers in order to focus on the long-range technology base efforts in the most critical technologies.²⁴ The LABCOM commander described the process:

Each morning we [LABCOM] would brief a particular emerging technology, such as directed energy. Then, in the afternoon, the TRADOC individuals, with the help of our scientists, would sit together and try to figure out how that emerging technology - in the case I mentioned, directed energy - could improve equipment or lead to new equipment which would solve battlefield requirements.

We did this in four areas. We looked at each emerging technology from a perspective of mobility, a perspective of lethality, a perspective of C³ [Command, Control, and Communications], and from a perspective of battlefield support.

We did that . . . for two weeks, and we came up with some interesting notional systems to add to our list of next-generation and notional systems that we think we should provide the opportunity for to the Army. Then, we followed on about two weeks later, towards the end of March [1988], with a war game. . .

Certainly one war game does not make a total picture, but, from the first war game, at least, we've gotten some interesting insights into the value of things like robotics (of great value), space (of great value), efficient command and control. Those three stick in my mind as three of the most high-leverage of the notional ideas that we introduced in the war game.

²¹AMC Stewardship Letter, "In Support of the Soldiers in the Field," reprinted in the AMC AHR for FY88, p. 6.

²²Ibid.

²³Draft narrative for General Wagner's citation.

²⁴Ibid.

One of the great benefits of this interaction is that now TRADOC is very interested. They are very comfortable with the talk of high tech. They feel that we have given them a good education, and now they are ready to interact with us as peers as we plan the future of the tech base.²⁵

The LABCOM Commander attributed the close liaison with TRADOC to the relationship between General Wagner and the TRADOC Commander, General Maxwell R. Thurman. "They forced a marriage which I think was very positive for the Army, especially for the materiel development community." In order to strengthen the relationship and not have it "be subject to the whims of the Commander of TRADOC and the Commander of AMC," LABCOM took the lead in establishing close relations with TRADOC's Combined Arms Combat Development Agency in order to establish the liaison at the second level of command.²⁶ General Wagner noted in turn that the war gaming was "one of the most exciting things that's been going on in the last year," and explained that getting AMC and TRADOC to work that closely together was "the reason that General Thurman and I have insisted that the working relationship between TRADOC and AMC be hand-in-glove."²⁷

General Wagner actively supported the AMC Field Assistance in Science and Technology (FAST) program and "cemented it by achieving very effective personal liaison with the commands in the field." This resulted in AMC usually being aware of requirements before they were formally requested.²⁸ A requirement for a Korean ground surveillance radar generated by the Korean FAST office was delivered to Korea and brought to operational status in August 1988. Training on this computer-based modern radar was accomplished quickly, and the system was in place in time for the Olympic Games. System reliability was exceptional for test-bed equipment and troop reviews were favorable. Another FAST program sponsored the development and demonstration of an Auxiliary Power Unit (APU), which provided electrical power to the M1 tank while it was in the "Silent Watch" mode of operation in lieu of using the tank's diesel engine. It was estimated an M1 Tank equipped with an APU would use approximately \$40,000 less in fuel per year than an M1 tank without an APU.²⁹

Under General Wagner, AMC actively promoted early user involvement with prototype devices in the field. Using prototypes of tomorrow's equipment to solve today's problems allowed engineering changes to be accomplished more cost-effectively, more quickly and with an early consideration of manpower and personnel integration. To resolve the problem of image intensification devices being rendered ineffective by the dense jungle canopy, two prototype manportable thermal imagers and advanced development models of a Thermal Weapon Sight and a Short Range Thermal Sight were successfully used for target acquisition and video documentation of possible enemy activities during training of U.S. soldiers in the Republic of Panama. The devices were used on day and night reconnaissance patrols and from helicopters.³⁰

²⁵LABCOM Oral History Interview by William T. Moyer with BG(P) Malcolm R. O'Neill, Commander, U.S. Army Laboratory Command, July 1987 to December 1989, p. 16. Hereafter, cited as BG O'Neill Interview, HQ LABCOM, Jul 87 - Dec 89. The war game is further discussed in an unpublished AMC interview with General O'Neill.

²⁶Ibid, p. 61.

²⁷GEN Wagner Interview, HQ AMC, 14 Apr 87 - 26 Sep 89, p. 77.

²⁸BG O'Neill Interview, HQ LABCOM, Jul 87 to Dec 89, p. 59.

²⁹AMC Stewardship letter "In Support of the Soldier in the Field," reprinted in AMC AHR for FY88, p. 6.

³⁰Ibid.

The Vehicle Electronics Crew Station Research and Development Facility became operational in 1988 at the U.S. Army Tank-Automotive Command (TACOM). The facility was used to define the soldier machine interface requirements for new or improved ground combat vehicles, enabling early establishment of functional requirements and performance specifications.³¹

Under General Wagner's direction the Tri-Service Hyper Velocity Missile advanced development (RDTA 6.3a) program was completed, and the program was then given to the Army as the Line of Sight Antitank Kinetic Energy Missile Project Office.³² The Millimeter Simulation System was activated. This was the first of its kind hardware-in-the-loop facility for millimeter seekers. Significant advances were made in low cost, short-range air defense technology and future applications of fiber optics.³³

Major technical and development programs advancing towards potential delivery to the user in the 1990s included Smart Munitions, Sense and Destroy Armor, Wide Area Mine, Liquid Propellant Guns, Unicharge and the Lightweight 120mm Tank Main Armament System. Many new concepts were being explored in such areas as acoustic technology, voice activated commands and controls, explosively-formed penetrator technology, enzymatic synthesis of energetic technology, and electromagnetic gun research. There were also significant activities ongoing to develop chemical/biological defense to counter new biochemical agents and "defeating agents," i.e., agents capable of defeating the protective value of filters and overgarments.³⁴

Test and Evaluation. In the area of test and evaluation a number of important accomplishments were made under General Wagner's direction. Even prior to his becoming AMC commander, LTG Wagner as the Army's Deputy Chief of Staff for Research, Development and Acquisition (DCSRDA), had directed AMC to develop a plan for vulnerability and lethality assessment. As AMC Commander he had directed the establishment of LABCOM's Vulnerability Lethality Assessment Management Office (VLAMO) and charged it with the oversight of all AMC organizations involved in vulnerability and lethality assessment. Its tasks included assessing AMC's current capability in these areas and planning and programming for required capabilities. Its most important task was to insure that such assessments made the best use of information obtained during development, thereby minimizing the cost and maximizing the utility of the assessments.³⁵

Two high profile vulnerability tests undertaken during General Wagner's command involved the Bradley Fighting Vehicle System and the Abrams tank. Under General Wagner's guidance and direction, the techniques, procedures, principles, and methodology employed on the Bradley and Abrams Live Fire Vulnerability Test were developed. Their development gave the Army a unique ability to implement the congressional initiatives established in the FY87 Defense Authorization Bill, as further modified in FY88. The success of the Bradley and Abrams Live Fire Testing Program established the basic procedures and

³¹Ibid., p. 23.

³²Draft narrative for General Wagner's citation.

³³Ibid.

³⁴AMC Stewardship letter reprinted in AMC AHR for FY88, p. 7.

³⁵Memorandum from LABCOM Deputy Commander, Subject: Award for General Wagner.

methods which were incorporated into the Office of the Secretary of Defense guidelines for future live fire tests by all the Services.³⁶

This testing had been carried out by a new Live Fire Testing Office which had been established at the U.S. Army Test and Evaluation Command (TECOM) to conduct all live fire tests, both for vulnerability analysis and for lethality testing. In addition to the tests of the Bradley and the Abrams, this office carried out tests on the tank-fired XM829E1 120mm Armor Piercing, Fin Stabilized, Discarding Sabot-Tracer for the XM256 cannon; the Forward Area Air Defense System; and the Seek and Destroy Armor missile.³⁷

Other significant test programs included TACOM's lead-the-fleet testing of several Army helicopters--the AH-1S, AH-64A, CH-47D, and UH60A--as part of the overall TRADOC-managed Armywide lead-the-fleet program. Obscurant countermeasure tests were conducted on the Forward Area Air Defense System-Line of Sight-Forward Heavy, the Advanced Antitank Weapon System-Medium, and at the Multi-Sensor Fusion Demonstration held at Fort Hunter Liggett.³⁸

Several improvements were made to the Microclimate Air Vest which resulted in a simplified design of the item, made it easier to manufacture, and decreased the overall manufacturing costs (at currently projected quantities this would result in an annual savings of \$400,000). The air vest could be worn by both aviators and ground combat vehicle crewmen, eliminating the need to stock two separate items in the Army inventory.³⁹

In response to a request from the 82nd Airborne Division, the Assault Command Post (ACP) mounted in a High Mobility Multipurpose Wheeled Vehicle was designed and fabricated. It provided the front-line commander with very high frequency and tactical satellite radios, facsimile, teletype and communications security equipment to support secure voice and data communications at brigade, division and corps levels. It was vehicle-powered but would automatically switch to generator power when the vehicle battery reached a preset low voltage condition. It could be air-dropped with the troops and rapidly deployed worldwide from airdrop to over-terrain maneuvers. It provided a more immediate command, control, and communications facility, reduced command post setup time following airdrop by approximately 75 percent, and provided more work space and more efficient use of personnel.

The capability of the CH-47D cargo helicopter for self deployment anywhere in the world was enhanced with the development of a 29-foot, 9-inch fixed length refueling probe and illumination for night visual refueling. This also enhanced special mission capabilities and provided an aerial refueling boom for the MH-47E helicopter. An airworthy release was issued and the first units were delivered to the field. Another effort (marinization) determined the modifications and equipment necessary to enable Army helicopters to sustain operations from naval ships in coastal areas where adequate land bases are not available, as occurred during the Persian Gulf "tanker war." Two elements of marinization--corrosion prevention and control and electromagnetic vulnerability--had inherent value for Army operations and these

³⁶Draft citation in General Wagner's Contributions file in the AMC archives.

³⁷AMC Stewardship Letter, "In Support of the Soldiers in the Field," reprinted in the AMC AHR for FY88, p. 8.

³⁸Ibid.

³⁹Ibid., p. 7.

ongoing programs received new emphasis. Special equipment was deemed unnecessary except for Special Operations Aircraft whose mission included ship-based operations.⁴⁰

Systems that were type classified during this period included the Field Protective Mask, M40; the Lightweight Decontamination System, M17; the White Phosphorus 60mm Mortar Cartridge, M722; the 155mm Basebleed Projectile; armor tiles to protect the Bradley; major Army components for the new 155mm Nuclear Projectile; M43 Aviator's Chemical Mask; new Autoset Electronic Time fuze; Chemical Agent Monitor; Ground Emplaced Mine Scattering System; 81mm Mortar; Towed and Self-Propelled Product Improved Vulcan Air Defense System; and improved 155mm Self-Propelled Howitzer.⁴¹ Other systems included the improved M825E1, 155mm, white phosphorus smoke warhead;⁴² the Ranger Anti-Armor/Anti-Personnel Weapon System, and UH-60L Black Hawk helicopter. (Approval for type classification for the latter was not actually received until a few days after General Wagner retired).⁴³

Contractor Performance. The Wagner era saw a continued effort to achieve both efficiency and quality in manufacturing by contractors. The Contractor Performance Certification Program [(CP)²] recognized contractors that consistently produced high quality products by certifying them and then reducing the level of government oversight at their facility. In addition to continuing to expand this program, AMC under General Wagner also revised an AMC regulation on the topic, although the revision was not issued in this period. In addition a (CP)² flag was designed by The Institute of Heraldry and manufactured by the Defense Personnel Supply Center during FY89.⁴⁴

In March 1986, HQ AMC and Hughes Aircraft Corporation entered into a Memorandum of Agreement, the terms of which were intended to improve Hughes' performance on several Army contracts, including the Position Locating and Reporting System (PLRS), Firefinder, and the Tube-Launched, Optically Tracked, Wire Command-Link (2) Sub System (TOW 2 SS). The MOA provided for monthly on-site reviews, teleconferences, and the implementation of 175 specific corrective actions. During General Wagner's tour of command the TOW 2 SS and Firefinder regained contract schedule in 1988 and were removed from all terms and conditions of the MOA. The PLRS program continued to experience difficulties but steady progress was made during 1989. In response to this progress, the CG AMC completely released the PLRS and Hughes Aircraft from all provisions of the MOA.⁴⁵

Under General Wagner the Contractors Requiring Special Attention (CRSA) program underwent a major review in preparation for the revision of AMC Circular 70-3, *Research, Development, and Acquisition: Contractors Requiring Special Attention (CRSA) Program*. The revision served the purpose of incorporating MSC experience into an improved program. During FY89, the Command Counsel provided a boost to the program by initiating a Pilot Debarment Program in two MSCs (TACOM and MICOM) where contractors identified by the CRSA program who did not improve their performance would be processed for debarment

⁴⁰Ibid., pp. 7-8.

⁴¹Ibid., p. 8 and AMC AHR for FY87, pp. 181-183. For a fuller list of items type classified in 1987, including some type classified before General Wagner assumed command, see p. 158.

⁴²Historical Submission, DCS for Chemical-Nuclear Matters, FY89.

⁴³Historical Submission, DCS for Development Engineering and Acquisition, FY89.

⁴⁴Stewardship letter, "In Support of the Soldier in the Field," reprinted in AMC AHR for FY88, p. 9; Quality Assurance Historical Submission, FY89.

⁴⁵Historical Submission, DCS for Production, FY89.

in order to prevent the award of additional contracts to known poor performers. TACOM was selected for the program because it was the originator of the CSRA program and had the most experience with it, while MICOM was selected because it already had a contractor recommended for debarment.⁴⁶ The objective of the program was:

to ensure that those contractors who flagrantly and consistently abrogate their contractual duties are removed from the acquisition system. Although we do not envision a large volume of these cases, those that we do prosecute under this project will ease some of the administrative burden created by chronic non-performers. This project will send a message to those few contractors who do not accept their responsibilities that AMC will not tolerate contractor non-performance.⁴⁷

In FY89 the Army Audit Agency identified the CSRA program as potentially the most effective tool available to MSCs across the Command for making the contractor more accountable for the quality of its contracted items.⁴⁸

Problems at Bell Helicopter. General Wagner also had the responsibility for taking corrective action to solve a long-term problem at the Army Plant Representative Office (ARPRO) for Bell Helicopters and for instituting procedures to insure that such problems never again arose. AMC's DCS for Procurement had conducted, at the direction of the Assistant Secretary of the Army (Research, Development and Acquisition), special contract management reviews at the U.S. Army Aviation Systems Command (AVSCOM) and three of AVSCOM's ARPROs--Boeing Helicopter Company, McDonnell Douglas Helicopter Company, and Bell Helicopter Textron, Inc.

The resulting report stated that serious accounting system problems had been noted at Bell Helicopter since 1973 but that no serious effort had been made to correct them prior to the issue being brought to the attention of the Under Secretary of the Army and the Department of Justice. The report also noted that "the Assistant U.S. Attorney for Northern Texas has indicated he did not proceed with a criminal case against Bell Helicopter partly due to the manner in which AVSCOM and the ARPRO Bell conducted their activities."⁴⁹

Although the special contract management reviews did not evaluate the specific charges, they did review the general functional areas in which problems had occurred to determine if the weaknesses still existed.⁵⁰ They did, although ARPRO Bell Helicopter was the only one of the three ARPROs rated unsatisfactory. Of nine functional areas rated, it was found unsatisfactory in seven. Although the report rated the other ARPROs as satisfactory, it found significant problems with the existing ARPRO system.

⁴⁶ AMC, *Command Counsel's Legal Program Poor Performers Debarment Project*, p. 1.

⁴⁷Memorandum through Deputy Commanding General for Materiel Readiness for Commander, 29 Mar 89, subj: Poor Performers Debarment Project, 29 Mar 89.

⁴⁸Historical Submission, DCS for Production, FY89.

⁴⁹Historical Submission, DCS for Procurement, FY88. See also the Congressional Liaison Historical Submission, FY88, for scathing Congressional testimony on the situation at Bell Helicopter, including a recommendation that military personnel be removed from the acquisition process because their military background was incompatible with good business practices.

⁵⁰AMC, Special Contract Management Review, Aviation Systems Command (AVSCOM) and the Army Plant Representative Offices (ARPROs), May - June 1988., 18 August 1988, p. ii. This document was included in the DCS for Procurement Historical submission for FY88.

The most significant problem identified during the review was the limited management involvement of the ARPROs by AVSCOM and by HQ AMC. Instead of actively helping the ARPROs solve problems, we believe that AVSCOM failed to address problems until they became so significant that they came to the attention of higher level officials. A prime example of that failing was the accounting system problems that were allowed to continue and grow at Bell Helicopter for over a decade without resolution.⁵¹

In summary, the report stated:

We found a lack of positive management, support, and oversight of the ARPROs by all levels of command. That condition allowed system pressures to predominate which, in turn, resulted in weaknesses and less than adequate management and inconsistent performance by the ARPROs. Notwithstanding, we concluded that on balance, the collective performance of the ARPROs was satisfactory; however, it is clear from this review that problems existed. Thus, the findings contained in this report and the associated recommendations should be used as a point of departure to build upon improvements already underway.⁵²

General Wagner tasked the special contract management reviews with addressing several other specific issues, including whether the ARPROs should continue to report to AVSCOM or should report to AMC. The report recommended that the ARPROs continue to report to AVSCOM but made a variety of recommendations to improve operations.⁵³

General Wagner expanded the impact of the ARPRO study to other AMC Contract Administration Offices (CAOs). These included two tank plants, the ammunition plants, Charleston storage facility, and the Mainz Army Depot. A dedicated team was established within AMC to provide oversight of the CAOs. That oversight team was monitoring resolution of the recommendations and would review existing policies and procedures in order to issue tailored guidance to meet the needs of the CAOs.⁵⁴ The Contract Administration Oversight Committee was established as a centralized dedicated team of functional specialists located within the Office of the Deputy Chief of Staff for Procurement. The specialists monitored to completion (resolution or implementation) any recommendations resulting from the SCMR or from an independent contract administration review conducted by LTG Donald M. Babers (RET.), a former AMC Deputy Commanding General for Materiel Readiness.⁵⁵

To strengthen the headquarter's oversight role in contract management, key functional analysts within the Headquarters were identified for information flow and for determination of AMC's position on functional issues. A number of actions also were developed that promulgate AMC policies, procedures, and guidance pertaining to contract administration. A contract administration handbook was drafted and forwarded to the contract administration offices for their review and comment, with a target publication

⁵¹Ibid.

⁵²Ibid., p. iii.

⁵³Historical Submission, DCS for Procurement, FY88.

⁵⁴Ibid.

⁵⁵Historical Submission, DCS for Procurement, FY89.

date of January 1990. In March 1989, the first AMC Contract Administration Conference was conducted in Gettysburg, Pennsylvania, with representatives from all 21 contract administration offices in attendance.⁵⁶

Contract management reviews were conducted in 1989 at Mainz Army Depot, Detroit and Lima Army Tank Plants, and at the AMCCOM. Follow-up reviews to the original SCMR were also conducted at AVSCOM and the ARPROs at Bell, Boeing and McDonnell Douglas. Results of these reviews indicated that most of the contract administration functions were being performed in an adequate manner and that the responsible MSCs were providing some form of oversight. Recommendations were provided to each activity and the activities were monitored for compliance and implementation. Follow-up reviews at AVSCOM and each of the ARPROs revealed significant improvement in the overall performance of functions and in the execution of oversight responsibility.⁵⁷

Overage Audits. A related issue involved AMC's handling of Defense Contract Audit Agency (DCAA) audits, since AMC had been ignoring DCAA audit reports since 1975 which had discussed the problems at Bell Helicopter.⁵⁸ Therefore in March 1988, after the Assistant Secretary of the Army (Research, Development and Acquisition) advised AMC that there were serious deficiencies in the Army's Contract Audit Follow-Up Program, the Headquarters AMC responsibility for that program was transferred from the DCS for Resource Management to the DCS for Procurement. The purpose of the program was to insure that issues raised in contract audits by DCAA were resolved with the contractor within one year. Data in early 1988 revealed that while the other Services were showing a decrease in such "overage" audits, the Army's were increasing.

To resolve this problem a number of steps were taken. The MSCs developed in-house training methods to resolve and dispose of audit reports. Monthly reports on the status of contract audits were superimposed upon the DOD requirement for semi-annual reports. And the MSC Principal Assistant Responsible for Contracting convened the Overage Audit Review Board on a monthly basis to review the status of outstanding audits and to report the status on a bimonthly basis. As a result of these actions the trend towards an increased number of overaged audits was reversed and the number of overaged audits was substantially reduced.⁵⁹

Past Performance in Source Selection. In January 1988, General Wagner established a task group to study the use of past performance in source selection. The group was jointly chaired by the DCS for Procurement and the Chief Counsel. Membership included representatives from Command Counsel, DCSs for Procurement, Product Assurance and Testing, and Production, and the Vint Hill Farms Station Procurement Directorate. During 1988, the group sketched out model procedures and a preliminary database, which set the stage for Vint Hill's actual use of the trial methodology in two buys ("Phase I"). The tests demonstrated that a thorough evaluation of an offeror's past performance significantly enhanced the government's confidence level in the offeror's ability to perform contract requirements. The personnel who participated in the source selections at Vint Hill strongly endorsed the program. Based on this success, Phase II of the trial implementation was authorized by General Wagner.

Phase II consisted of two test solicitations at each major subordinate command. Each of these solicitations included a request for past performance information from the offeror and a brief description

⁵⁶Ibid.

⁵⁷Ibid.

⁵⁸Historical Submission, Office of the Congressional Liaison, FY88.

⁵⁹Historical Submission, DCS for Procurement, FY88.

of the evaluation methodology, both based on model provisions developed during Phase I. An isolated Performance Risk Analysis Group would evaluate the performance portions of the proposal using information from the DCS's Contractor Information System.

Phase II would be completed when each of the test cases was awarded, projected to be early in 1990. Each group would submit an after-action report containing its assessment of the methodology and the procedures. These, combined with similar reports from each of the working group members, would determine the future of the program.⁶⁰

LHX T800 Engine Source Selection. General Wagner served as the Chairman of the Source Selection Advisory Council on the procurement of the Light Helicopter Experimental (LHX) T800 engine, and was successful in ensuring that innovative acquisition streamlining procedures were successfully implemented. The T800 engine buy was the largest engine buy in Army aviation history and its innovative, competitive acquisition strategy guaranteed a second production source, approved design, guaranteed average design-to-cost price for each engine, guaranteed operation and support costs, and guaranteed reliability, availability, and maintainability values.⁶¹

Computerized Part Manufacture. At the direction of General Wagner, AMC participated in a demonstration project with the U.S. Navy for state-of-the-art Computer Integrated Manufacturing (CIM) of small mechanical parts to minimize the response time and costs for spare parts manufacturing. The Navy program used a newly-developing industry standard, Product Data Exchange Specification, as the cornerstone of its CIM effort. The Navy had developed this program in its capacity of lead service for the Rapid Acquisition of Spare Parts (RASP) panel established by the Joint Policy Coordinating Group for Logistics Research, Development, Test and Evaluation.⁶² When the program became fully operational, it was expected to slash the overall production lead time for items it manufactured from 300 to 400 days to an average of 30 to 40 days.

AMC was eager to participate in the Navy program in order to determine the impact that this technology would have at Army facilities. It provided \$260,000 to fund the demonstration program. In order to test the Navy process, the AMC major subordinate commands that were National Inventory Control Points (NICPs) were tasked on 18 October 1988 to identify Level III technical data packages for the project. Primary selection consideration was given to Diminished Manufacturing Source items (obsolete parts with anticipated replenishment requirements) and parts for which no known source existed. Of the 165 technical data packages submitted in FY89, 35 were selected for the demonstration project. The RASP demonstration projects were scheduled for completion in the first quarter of FY91.⁶³

⁶⁰Historical Submission, DCS for Procurement, FY89.

⁶¹Draft narrative for Wagner citation and Memorandum for DCS for Personnel from Command Counsel, 28 Aug 1989, subj: Award for General Wagner, in Wagner contributions file in AMC Archives.

⁶²Memorandum for Distribution, 18 Oct 88, subj: Rapid Acquisition of Spare Parts, in Procurement Historical Submission, FY89.

⁶³Historical Submission, DCS for Procurement, FY89.

Matériel Readiness

Supply System Overhaul

In the broad area of matériel readiness, undoubtedly the most significant development that took place under General Wagner was the Objective Supply System (OSS).⁶⁴ General Wagner's strong support and enthusiasm for the OSS came through clearly in an end of tour interview with AMC historians:

Everyone at AMC knows that one of the initiatives that we have started during the last two years [1987-1989] and that I'm more excited about than anything else is what we call the Objective Supply System. It had its start in the difficulty of a soldier in the field getting a spare part down to his unit quickly when he requested it and often having no idea whether or not he was going to receive it until it arrived.

The problem we had was that when we automated our acquisition system, all we did was take the old system, the old forms, and the old financial management techniques and put them into the automated system--which was a heel-to-toe process of requesting and receiving an item of equipment. Incidentally, the Army Materiel Command is not the only one that has a problem. We have the same problem in the field units in the number of days it takes a Prescribed Load List [PLL] clerk in a company to get his requisition out of the division so it gets into the request net to the wholesale system in the Army Materiel Command, and then eventually back to him in the field.

Working as a team with TRADOC and the Forces Command, we started a new supply system that really makes wholesale and retail transparent. With the power of the computer and automation today we can skip many of the steps that we had in the past.

We can actually connect the PLL clerk in the company directly with the Army Materiel Command when he requests an item of equipment. We can tell him within a matter [of] a quarter of a minute--15 to 17 seconds--that we have received his requisition, it is a valid requisition, and in some cases we can tell him within that amount of time when he can expect delivery. If we have to spend a few more minutes figuring out where we're going to ship it from--whether it be the factory, the depot, or from another unit on post--he gets that information very quickly.

We cut our order/ship time at Fort Hood, Texas [OSS test site] from 66 to 75 percent. That means that we save a lot of money, because we don't have to have all of the supplies in the pipeline that we did in the past. More important than that, we are satisfying the customer--the user at the far end--in giving him the part he needs in a hurry and giving him confidence that the system works.

One of the problems that we had in the past with the supply system was the end users never had good status on their requisitions. Out of utter frustration, they would requisition the same part three or four times. Hence we had huge backlogs of excess built up in every unit in the world. That cost a lot of dollars and it meant that parts were unavailable in other units that might need them. We've got to clean this act up. I see the OSS as the way to do it.⁶⁵

⁶⁴See the comment of MG Harrison in U.S. Army Materiel Command Oral History Program: *Major General Jerry C. Harrison, Chief of Staff U.S. Army Materiel Command (31 July 1987-15 December 1989)*, pp. 9-10.

⁶⁵GEN Wagner Interview, HQ AMC, 14 Apr 87 - 26 Sep 89, pp. 45-47.

The OSS task force was established by AMC and TRADOC on 1 May 1988. The Phase I test took place from 30 September to 30 November 1988 at Fort Hood, and was a success. It reduced the order/ship time from 24.8 to 6.8 days; it improved asset visibility both in installation accounts and in the depot and MSC accounts; and it resulted in a high percentage of demands (42 percent) being filled from installation assets, which evidenced increased inventory utilization and excess drawdown, with a resultant cost avoidance by not having to utilize wholesale requisitioning.

Phase II was to start in October 1989 with the incorporation of Fort Rucker in the system. AVSCOM would be the lead MSC; its mainframe computer would serve as the OSS "gateway." The Army's Vice Chief of Staff directed that actions be taken to develop OSS for incorporation into the Army's standard supply system, and it was anticipated that it would be fully operational in Europe by the second or third quarter of FY90.⁶⁶

Logistics Assistance Program

During General Wagner's tour a major realignment of the Logistics Assistance Program took place. His predecessor, General Richard H. Thompson, had organized the LAOs on a regional basis rather than aligned with the different MACOMs. General Wagner followed up with establishment of a separate reporting agency, the Logistics Assistance Program Activity (LAPA), with a goal of achieving centralized control over the worldwide LAPA program, including personnel and financial resources. HQDA approved it on 10 September 1988 and it became officially established as of 1 May 1989. LAPA consolidated the Tables of Distribution and Allowances of the four geographic Logistics Assistance Offices (LAO) (LAO-CONUS, LAO-Europe, LAO-Far East, LAO-Pacific) and the Logistics Assistance Division of HQ AMC's DCS for Readiness into one new separate reporting agency commanded by AMC's Deputy Chief of Staff for Readiness. LAPA was provided no new personnel resources.⁶⁷

The Logistics Assistance Representatives (LARs) who performed the actual maintenance and maintenance training assistance to the troops in the field still belonged to and were funded by the various MSCs but the logistics assistance offices, which worked for AMC through LAPA, had operational control over them. This organizational structure was "somewhat awkward" because the LARs had, in effect, two masters.

[I]f I were to ask you to go out to LAO Fort Carson, you would find a lieutenant colonel there and three or four folks--logistics types--and a secretary who work for us at Headquarters AMC. And attached to that LAO are 20 LAR's from the MSC's. The LAO chief has OPCON [operational control] of those LAR's and the LAR's are supervised by their MSC and a first line supervisor who might be at Fort Huachuca for CECOM, at St. Louis for AVSCOM and at Fort Lewis for the other four MSCs.⁶⁸

⁶⁶Point Paper, Subject: Objective Supply System (OSS) Milestones and Successes, in General Wagner Contributions file in the AMC Archives; Supply, Maintenance and Transportation Historical Submission, FY89.

⁶⁷Historical Submission, DCS for Readiness, FY88; AMC Oral History Program: *Ronald L. Treusdell, Assistant Deputy Chief of Staff for Readiness* (AMC, 1989), pp. 15-17; AMC Permanent Orders 115-5, 12 Dec 1988.

⁶⁸AMC Oral History Program: *Ronald L. Treusdell, Assistant Deputy Chief of Staff for Readiness* (AMC, 1989), p. 18.

An additional change was made in the status of the supply LARs. A study, initiated by General Thompson and carried to fruition by General Wagner, recommended the supply LARs be removed from the MSCs and put directly under LAPA. General Wagner made the decision in mid-1988 to centralize Supply LARs under the supervision of LAPA. This entailed transfer of 68 spaces and corresponding P7S OMA (Operations and Maintenance, Army) funds from the AMC MSCs to HQ LAPA.

The logic for centralization was that supply was a generic function that did not vary significantly from commodity to commodity as did more technologically driven functions such as maintenance. When Supply LARs were under the control of the MSCs there was a tendency for MSCs to group them together, e.g. in V Corps there were four supply LARs located at 3rd SUPCOM (Support Command) representing TACOM, AMCCOM, MICOM and CECOM. When centralized under LAPA, the authorization of Supply LARs for 3rd SUPCOM was reduced to two, and the remaining assets were distributed to units without previous supply LAR support. The result of centralization of supply LARs under LAPA was that the number of units with Supply LAR support was increased from 19 to 34 without any increase in personnel. In addition, 14 supply LARs were authorized to the AMC MSCs to provide a wholesale level interface for supply LARs in the field.⁶⁹

Efforts were also begun to automate the LAOs and LARs by providing office automation equipment and developing standard automated systems. Efforts were begun to design a Personnel Management Data Base and a Logistic Assistance Representative Activity Reporting System. Work was begun on the development of a multi-year procurement instrument which recognized the need for the development of a long-range automation strategy and provided the mechanism for implementing that strategy. At the end of FY89, a contract was awarded for a standard Logistic Assistance Representative Manpower Requirements Determination System. This system would be on-line at LAPA and the six MSCs in time for the FY91 manpower requirements cycle.⁷⁰

Area Oriented Depots. Under General Wagner substantial progress was made in the Area Oriented Depots Modernization (AOD MOD) program. It was an effort to modernize the Army's three area oriented depots (Sharpe, New Cumberland, and Red River Army Depots), which were responsible for shipping over 90 percent of Army-managed items, primarily Class IX repair parts, to our combat elements. This modernization program was to provide 3.7 million square feet of highly automated distribution facility space (not to be confused with storage space) which would enable the AODs to more rapidly distribute critical repair parts both in peacetime and during mobilization. This would improve materiel readiness during peacetime and promote faster response to repair parts requirements needed to return weapons systems to combat effectiveness during mobilization or wartime situations. The program consisted of three distribution centers utilizing two standard automation systems, which together were approximately 65 percent complete as of the end of FY89.⁷¹

General Wagner's tour of duty also saw the completion of the three European Redistribution Facilities (ERFs). The ERF mission called for each ERF site to serve as a turn-in facility for serviceable and unserviceable Class IX (repair parts), maintenance significant Class II (clothing and individual equipment), and class IV (construction) materiel. The first ERF site opened in 1986 in Boeblingen and the second and third sites in April 1987 at Nahbollenbach and in November 1989 at Grossauheim, respectively.

⁶⁹Ibid. pp. 23-24; Historical Submission, DCS for Readiness, FY88.

⁷⁰Historical Submission, DCS for Readiness, FY89.

⁷¹Historical Submission, DCS for Supply, Maintenance and Transportation, FY89.

Furthermore, in September 1989 the redistribution of serviceable high demand items was centralized at the Nahbollenbach ERF.⁷²

Ammunition Program. During General Wagner's tour, major organizational changes and improvements in program planning were made in the overall management of the Army's ammunition program. These included the merger of the Munitions Division from the HQDA DCSRDA and the AMC DCS for Conventional Ammunition into first a DA-level Program Executive Officer for Ammunition and then again into an AMC DCS for Ammunition, thus establishing a single focal point for Army ammunition within AMC and the Army. The PEO office was collocated with HQ AMC and became operational effective 1 July 1987, although the physical move of the Munitions Division personnel from the Pentagon to the AMC Building was not completed until 1 October 1987. The DCS for Ammunition was officially formed on 4 August 1988 as a result of an Army Acquisition Authority (AAE) decision memorandum of that date which disestablished the Program Executive Office Ammunition and in its place established the DCS for Ammunition at AMC.

A subsequent AAE memorandum, dated 23 August 1988, refined the new ammunition staff responsibilities. This memorandum stated that the new DCS for Ammunition was to have all the staff responsibilities for ammunition that had been previously assigned to the PEO for Ammunition. This would require the DCS to be dual-hatted as an AMC DCS and as the executive agent for ammunition for the Assistant Secretary of the Army for Research, Development and Acquisition. As a result, a small Pentagon office was maintained to provide HQDA-level ammunition program and budget review capabilities. The Pentagon office represented the Assistant Secretary of the Army (Research, Development and Acquisition) on the joint Department of Defense/Department of Energy Nuclear Weapons Council Standing Committee. The office was also responsible for binary munitions funding and acted as a proponent for nuclear survivability. Effective April 1988 the Pentagon core office took over responsibility for action officer requirements for the Conventional Systems Committee of the Defense Acquisition Board, which served as a forum for all conventional ammunition matters.⁷³

The DCS for Ammunition developed the 1995-2006 Field Long Range Research Development and Acquisition Plan and Extended Planning Annex (EPA). The EPA was based upon the FY94 portion of the FY90-94 Program Decision Memorandum with a total obligation authority growth of 1 percent per year. It was developed to emphasize the need to resource essential warfighting capabilities and was an extension of the POM (program objective memorandum). Although resource constrained, it was designed to be operationally logical. It provided for the armor/anti-armor program, funded armor enhancement initiatives at the OSD agreed upon level, funded high priority modernization of follow-on mines, 120mm mortar ammunition, and the future armor program. It also supported battlefield modernization and training at a minimum level. However, it did not provide for illumination rounds for the battlefield after 1992; maintain plant workload at plants projected to be active at the end of the POM; or provide for sufficient surge capability based upon mobilization of the ammunition production base with modernized technology.⁷⁴

The DCS also developed an Ammunition Production Base Master Plan (APBMP). The APBMP was a one to twenty year plan begun in June 1988 to develop a way to meet ammunition mobilization

⁷²AMC AHR, FY87, pp. 208, 247; Historical Submission, DCS for Supply, Maintenance, and Transportation, FY88/FY89.

⁷³Draft narrative for General Wagner's citation, AMC AHR for FY87, p. 177, and AMC AHR for FY88, DCS for Ammunition section.

⁷⁴Draft narrative for General Wagner's citation; Historical Submission, DCS for Ammunition, FY88.

requirements. The plan would highlight the shortfalls resulted from a twenty-year neglect of the ammunition production base and it would identify the necessary corrective measures.

The plan was to be developed by the DCS for Ammunition and AMCCOM and was to include the requirements of all the Services as well as the non-hardware requirements such as the maintenance of the production base itself. The requirements were to be matched against available resources and the resulting shortfalls would have their risks identified. A prioritized plan unconstrained by resource limitations would then be developed to reduce or eliminate the risks, and the projects identified in the plan would be implemented as funding became available. The Maximum Army Expansion Model (MAX) would be used to identify "pacer" items that would be warfighting constrainers. Resources could then be concentrated on those items.⁷⁵

Other achievements in the ammunition arena included the implementation of a Technical Center for Explosive Safety and an Ammunition Production Base Management Study which ranked Government-owned Ammunition Plants based on factors such as responsiveness, sustainability, support to war reserves, and training.⁷⁶

Management of Resources

The arrival of General Wagner coincided with changes which made management of AMC resources more of a challenge. The reductions mandated by Congress and implemented by HQDA compelled the Commanding General to make decisions which impacted upon the entire command. Glidepath projections were revised and resources were allocated to enable the command to adjust to pending personnel losses and the tremendous reduction in funding. In addition, the HQDA reorganization which resulted in the establishment of an Army Executive Officer and Program Executive Officers caused the command to lose most of its Program Managers along with their supporting personnel. After reviewing reductions in maintenance and supply, and the large quantity of personnel scheduled for elimination, General Wagner, in a moment of frustration during a Congressional hearing, stated:

We're going to do less with less. We're going to prioritize among the things that the Army can do and not do. In the long run, it's going to have a derogatory effect on the readiness of the Army. With the dollars we have now, we're going to concentrate on supporting the fielded equipment and cutting things out like inventory management.⁷⁷

Image of AMC

General Wagner directed Public Affairs to develop and implement a marketing strategy during FY88 to improve the image of AMC. Under this initiative, a Marketing Branch was established which communicated a message equating AMC with quality--quality of products and all efforts; with service to the soldier, and with the fact that AMC is essential and integral to all things the Army does. The marketing

⁷⁵Draft narrative for General Wagner's citation; Historical Submission, DCS for Ammunition, FY88.

⁷⁶Draft narrative for General Wagner citation.

⁷⁷GEN Wagner Interview, HQ AMC, 14 Apr - 26 Sep 89, pp. 17-18.

program focused on two initial target audiences, the soldier and the internal AMC audience.⁷⁸ By the end of FY89, marketing achievements included the establishment of an ad hoc task force to quickly reply to questions from soldiers about their equipment, the development of a color brochure that explained the AMC mission, and the production of a videotape that showed AMC's efforts to protect the environment.

General Wagner realized that the perception of AMC by the user in the field was negative and that many considered the command a bureaucracy or stumbling block that prevented proper support. He was keenly aware that this was a misconception on the part of the user since few knew the mission and support that was provided by the command. Establishing a close working relationship with General Thurman in the TRADOC, he endeavored to improve the "way we did business." General Wagner understood that "50 percent of the inefficiency in providing spare parts and supporting units in the field was the fault of field units and their own bureaucracy. But, no one ever called that to their attention."⁷⁹ Instead, General Wagner determined the best way to improve conditions was through education and by eliminating the conflict between "supporters and fighters."

General Wagner was cognizant that negative publicity in the public media had projected the wrong image of the command. Most journalists did not understand or report the wholesale side of logistics. The mission of the Defense Logistics Agency (DLA) was different from that of AMC. However, the perception on the part of the soldier and the general public was that AMC was responsible for every single item issued to soldiers.

General Wagner stressed that the military basically took a defensive stance toward publicity but this had to change. For too long the Army had waited until criticism forced a counter reaction. The command was in the best position to identify problems, and in more instances, it had worked quietly behind the scenes to correct situations. General Wagner speculated that the first thing AMC should have done, in the issue of defective bolts, was to announce the problem in the news media instead of letting a Congressional committee announce it. This would have eliminated the defensive posture and the presumption that the command was attempting to hide something.⁸⁰

Through the Office of Public Affairs General Wagner got his message out in the mass media, via magazines, newspapers, interviews, videotapes, speeches and briefings, that "AMC makes great stuff!" His messages denounced the negative stereotyped image of the Army civilian and emphasized how AMC developed and fielded materiel. He encouraged every enlisted soldier, noncommissioned officer and officer to write directly to him concerning equipment and materiel problems they had experienced. If mistakes were made, which was possible, he assured them that the problems would be corrected and that every effort would be made to eliminate waste, fraud and abuse. General Wagner further announced that AMC was dedicated to working smarter and better and that quality was the watchword in every thing the command did from the concept and development cycles through testing, acquisition and fielding.⁸¹

⁷⁸Historical Submissions, Office of Public Affairs, FY87-FY89.

⁷⁹GEN Wagner Interview, HQ AMC, 14 Apr - 26 Sep 89, p. 11.

⁸⁰Ibid, pp. 15-16.

⁸¹General Louis C. Wagner, Jr. and Suzanne M. Nash, "Soldier Views Important to Materiel Command's Mission: AMC Makes Great Stuff," *Army* 39 (Oct 89): 70-77.

Realignment and Reorganization

Chief Scientist

The position of Chief Scientist was originally created in 1963 as an independent office and remained so until 1966 when it was placed under the Deputy for Research and Laboratories for the next seven years (1966-1973). After further organizational changes the position was abolished in the mid-1970s. After a hiatus of over a decade the position of Chief Scientist at Headquarters, U.S. Army Materiel Command was reestablished by General Wagner in May 1988.

The Office of the Chief Scientist was established with the Chief Scientist, an Assistant Chief Scientist, a military assistant, and a secretary. Reporting directly to the Commanding General, the Chief Scientist served as his principal advisor and consultant on scientific and technological matters. He was responsible for working with the DCG for Research, Development and Acquisition and the DCS for Technology Planning and Management, who was also the LABCOM Commanding General, in the formulation, maintenance and implementation of AMC's long-range strategic plan for the future investment of AMC's science and technology resources.⁸²

The Chief Scientist also provided an AMC senior-level link and representation to scientific and technological organizations such as the Army Science Board, the Defense Science Board, the Board for Army Science and Technology, the National Academy of Sciences, as well as the scientific, academic and industrial communities.

In July 1988, GEN Wagner selected as his Chief Scientist Dr. Richard Chait, former Associate Director of the U.S. Army Materials Technology Laboratory (MTL), Watertown, MA. A graduate of Rensselaer Polytechnic Institute and Syracuse University with undergraduate and graduate degrees in Metallurgical Engineering and Solid State Science respectively, Dr. Chait held key management positions in Metals and Ceramics, the Mechanics and Engineering and the Engineering Standardization Divisions during his nineteen years at MTL.⁸³

Dr. Chait viewed his main responsibilities at AMC as being the interface between the external technological and scientific community and the CG, AMC, and the communicator of external technological and scientific ideas to the technical directors and line managers of AMC's laboratory and research, development and engineering centers. His responsibilities involved constant awareness of current and emerging technologies in the AMC community as well as the private sectors of academia and industry and in the international arena.⁸⁴

Early in the fiscal year, Dr. Chait was asked by General Wagner to be the Army focal point for a study undertaken by the National Academy of Sciences at the request of Dr. John R. Scully, Assistant Secretary of the Army for Research, Development and Acquisition. Focusing on the technological advances which may exist 20 to 30 years hence, and which would affect the battlefield significantly, the study, known as the STAR Study (Strategic Technologies for the Army) was scheduled for completion in December 1990.⁸⁵ To provide the required Army participation, the Chief Scientist directed the formation of a group

⁸²Letter AMCMP, dated subject: Chief Scientist, 6 October 1988.

⁸³Biographical Sketch, Dr. Richard Chait.

⁸⁴Oral History Interview, Dr. Chait with Darius and Coppola, 23 May 1990.

⁸⁵Ibid.

of leading Army scientists and engineers drawn from AMC, the Corps of Engineers, the Army Research Institute and the Medical Command, to be the main interface with the Academy of Sciences on nine of the 16 panels that form the study group. This Army scientific and technological contingent was recognized by the Study chairman as having been the key factor in the successful start of the STAR Study.

Other activities of the Chief Scientist included: participating in the Tech-Base Advisory Group (TBAG), consisting of the technical directors of the AMC laboratories and research centers; involvement in the technological base master plan formulation in concert with the SARDA organization; arranging discussions between Chief Scientists of the Air Force and Navy and those of other federal agencies on topics of mutual interest; increasing participation by West Point cadets in the 1989 Summer Research Program at AMC laboratories and research centers; helping to create, in concert with the AMC Technical Directors, new research intern positions within the DA intern program; visiting several European countries to meet scientists and researchers involved with the Field Assistance in Science and Technology (FAST) program, U.S. Army Standardization Groups and the Scientific and Technical Information Centers.

Several initiatives were undertaken, among which the establishment of the task force on Standard Damage Assessment and the examination of new foundations for tank vulnerability analysis, which were transitioned to the Vulnerability Lethality Assessment Management Office (VLAMO) and to LABCOM, respectively.

General Wagner said this of his Chief Scientist: "I listen very carefully to what Dr. Chait says."⁸⁶ The position of Chief Scientist was established to have somebody "at the right hand of the commander," to keep him "up to speed on technology and to be AMC's face to the scientists and technologists of the U.S. and the world."⁸⁷ The idea seems to have succeeded.

Other Reorganizations

Several other significant reorganization and realignment changes included:

- * The U.S. Army Survivability Management Office became the AMC staff focal point for coordination of Counter-Countermeasure and Survivability Program and Policies.

- * The U.S. Army Management Engineering Activity (MEA) was transferred from the DCS for Management and Productivity to the DCS for Resource Management.

- * The U.S. Army Toxic Hazards and Materials Agency was transferred from AMC to the U.S. Corps of Engineers.

- * The Director of Information (DOIM) activity, initially established and aligned under the U.S. Army Information Systems Command-AMC (ISC-AMC), was realigned under Headquarters Installation Support Activity (HISA).⁸⁸

⁸⁶GEN Wagner Interview, HQ AMC, 31 Aug 1989 p. 63.

⁸⁷Ibid.

⁸⁸ Memorandum, DCS for Resource Management for Director, AMCMEA, 15 Sep 88, subj: Concept Plan for Reorganization of the USAMCEA; Memorandum, DCS for Resource Management for CG, AMC, 15 Sep 88, subj: Support of AMCMEA Functional Model Initiative; Memorandum, LTG Bunyard for the Acting ASA(RD&A), 6 Sep 89, subj: Program Executive Officer (PEO) Resource Support System Changes; Memorandum, LTG Bunyard for Acting Assistant Secretary of the Army (RD&A), 12 Sep 89, subj: Army

In August 1988, after experiencing personnel and management problems with the Special Assistant for Congressional Affairs, the Commanding General and Chief of Staff, AMC, decided to reorganize the office as the Congressional Liaison Office. General Wagner appointed a colonel as chief of the office.⁸⁹

A Command Group initiative abolished the DCS for Management and Analysis on 31 March 1988 and reestablished it as the DCS for Management and Productivity. On 7 April 1988 the Office of Program and Analysis, which had been established on 1 October 1987, became the DCS for Program Analysis and Evaluation. Another Command Group decision assigned the AMC Systems Management Office to the DCS for Program Analysis and Evaluation on 6 April 1988. With authority from the Chief of Staff, automated functions previously performed by the DCS for Resource Management were transferred to the DCS for Program Analysis and Evaluation on 16 August 1988.⁹⁰

To improve efficiency at the Tropic and Cold Regions Test Centers, the former was merged with Dugway Proving Ground. A savings of 112 personnel spaces was realized. Operations at the latter were also streamlined and resulted in a savings of 203 spaces. Both actions achieved significant savings while maintaining the capability to accomplish the critical environmental test mission.⁹¹

Since the responsibility for the Base support Area Mission was established specifically for the DCS for Resource Management, it was not appropriate to incorporate this responsibility into the functions of the newly established DCS for Program Analysis and Evaluation. The DCS for Resource Management retained this function and its Program Budget and Policy Division was designated as the Mission Area Manager (MAM). This realignment involved no spaces, but responsibility for AMC Guidance, Program Analysis and Resource Review (PARR) and BPRR (Budget and Program Resource Review) Commander's Letter, and the Program Decision Memorandum (PDM) were included in the DCS for Program Analysis and Evaluation mission.⁹²

The Information Center in the Office of the Director of Information Management was reorganized in June 1989 to improve customer service and support to HQ AMC personnel and tenant activities. The Work Place Automation Branch became the Information Center and the Applications Branch became a division.⁹³

Acquisition Executive Office (AAE) Decision Memorandum, PEO Support System Changes; COL Robert D. Mortig, Director, Acquisition and Industrial Base, HQDA, for Distribution, 8 Sep 89, subj: AAE Decision Memorandum, Ltr, GEN Wagner to Secretary of the Army, 8 Sep 89; Management and Productivity Historical Submission, FY88/FY89; Information Management Historical Submission, FY88; PO 104-1, 6 Sep 88, HQ ISC, Ft Huachuca, AR.

⁸⁹Msg, 201845Z Sep 88, AMC to AIG, subj: Disestablishment of the Special Assistant for Congressional Affairs, AMC; SF 52-B, Request for Personnel Actions, 31 Oct 88; Memo, COL LaBounty for Commandant, 31 Oct 88, subj: HQ AMC Civilian Manpower Reduction; Memo, MG Harrison for Chief, Congressional Liaison Office, 26 Oct 88, subj: HQ AMC Civilian Manpower Reduction.

⁹⁰Historical Submission, DCS for Program Analysis and Evaluation, FY88.

⁹¹Memorandum, TECOM SGS to HQ AMC, 24 Aug 89, subj: TECOM Input to General Wagner's Award Recommendation.

⁹²Historical Submission, DCS for Program Analysis and Evaluation, FY88/FY89.

⁹³Historical Submission, Director of Information Management, FY89.

Personnel

General Wagner expected further mission changes and a major reorganization and alignment as a result of the DMR initiative. Workforce 2000 studies also suggested a scarcity of well-qualified or fully skilled candidates for entry level positions in the near future. Federal managers were expected to improve the "total quality" of their workforce by developing and undertaking employee-management outreach initiatives.

HQ AMC forwarded a concept plan on the demonstration project, Gateway 2000, through HQDA to the Office of Personnel Management for approval. Gateway 2000 was developed jointly by the U.S. Army Troop Support Command (TROSCOM) and AVSCOM in St. Louis, Missouri as a result of the Packard Commission Study. Demonstration projects were authorized under the Civil Service Reform Act of 1978 to test alternative personnel systems for improving personnel management. Gateway 2000 included:

- * New classification and compensation system, which included pay banding and career paths.
- * Performance evaluation and employee reorganization which proposed two rating levels - acceptable and unacceptable, with bonus pay for performance.
- * Training and employee development, including the establishment of a degree tuition program and mandated 40 hours training per employee per year).⁹⁴

General Wagner had inherited and maintained a superb staff from his predecessor, but through retirements he lost several key personnel. LTG Jerry M. Bunyard, DCG for Research Development and Acquisition and a major participant in the DMR, retired in September 1989.⁹⁵ Ms. Marie B. Acton retired on 31 March 1988 from the position of Deputy for Management and Analysis which she had held since 1984. Mr. Robert O. Black, AMC Principal Assistant Deputy for Research, Development and Acquisition also retired on 2 July 1989. He was the Army Advocate for Acquisition Streamlining. Command Sergeant Major William B. Tapp completed his 35-year Army career in June 1989, marking the end of a nine-year AMC assignment for the Army's senior CSM, with more than 18 years in that grade. His successor was CSM John W. Gillis.⁹⁶

Base Realignment and Closure Actions

In December 1988, the Secretary of Defense's commission on Base Realignment and Closure (BRAC) issued its report which was approved, becoming Public Law 100-526, Sec. 201 in May 1989. The report affected 145 installations, including 86 recommended for closure, five for partial closure, and 54 others for realignment. The BRAC Commission's report projected a manpower savings by FY95 of 22 military and 1,082 civilian spaces through closure or realignment of the following AMC installations:

⁹⁴Historical Submission, DCS for Personnel, FY89.

⁹⁵General Wagner Speech, LTG Bunyard's Retirement Review, Ft. Belvoir, VA, 19 Sep 89.

⁹⁶AMC News, June 89.

* Closure of Fort Wingate Ammunition Storage Depot and the return of the real estate to the Bureau of Land Management. This would involve realigning the ammunition function at the Hawthorne Army Ammunition Plant, eliminating four authorized spaces, and transferring one authorized space to Yuma Army Depot.

* Closure of Lexington Blue Grass Army Depot. This would involve realigning the communication-electronics supply and maintenance function to Tobyhanna Army Depot. The test, measurement, and diagnostic equipment Central Test Activity function would be transferred to Redstone Arsenal, Alabama, and its Materiel Readiness Support Activity would be realigned to Letterkenny Army Depot, Chambersburg, Pennsylvania. The 33 authorized Materiel Readiness Support Activity spaces would be transferred to the DOIM at Letterkenny Army Depot; 37 authorized Logistics Control Activity spaces would be transferred to the DOIM at Blue Grass Army Depot, along with their associated functions; and nine authorized spaces would be eliminated.

* Closure of the Army Materials Technology Laboratory (MTL). This would move the ceramics and related research functions to the U.S. Tank-Automotive Research, Development, and Engineering Center at Detroit Arsenal. The metal and metal-related research functions would move from the U.S. Army Armament Research, Development, and Engineering Center at Picatinny Arsenal. The corrosion prevention and control related research would move to the Belvoir Research, Development, and Engineering Center. At MTL, 27 authorized spaces would be eliminated and one authorized military space would be transferred to the DOIM at the U.S. Army Laboratory Command.

* Closure of Jefferson Proving Ground. This would involve the transfer of its functions to Yuma Proving Grounds, Arizona, eliminating nineteen authorized spaces.

* Realignment of the Umatilla Army Depot ammunition function, less the chemical munitions storage operation function. This would realign the conventional ammunition to Hawthorne Army Ammunition Plant. The chemical munitions operation would be retained, pending on-site destruction of the chemical munitions stocks, which was tentatively scheduled for FY97, and four authorized spaces would be eliminated.

* Realigning all functions at Pueblo Army Depot, less the chemical munitions storage operation. This would realign the supply function to Tooele Army Depot in Utah, and the conventional ammunition function to Red River Army Depot. The chemical munitions operation would remain, pending on-site destruction of the chemical munition stocks which was tentatively scheduled for FY98, eliminating nine authorized spaces. Thirteen authorized spaces would be eliminated.

The commission did not specifically mention the LCA which was scheduled for transfer to Letterkenny Army Depot because of the announced closing of the Presidio of San Francisco, where the LCA is located. Other actions minimally impacting AMC were the sale of 900 acres at Indiana Army Ammunition Plant, the sale of 100 acres at the Nike Site in Aberdeen, Maryland, and the closure of Wherry Housing at St. Louis, Missouri and Manassas, Virginia. AMC would implement all closures and realignment action between 1 January 1990 and 30 September 1991, and complete these actions by 30 September 1995.⁹⁷

Major commands provided data in September 1989 for the HQDA implementation plan. After reviewing the MACOM plans, HQDA determined that the Vice Chief of Staff, Army (VCSA) and the Select Committee (SELCOM) should review the matter and determine a new distribution of BRAC space savings. As a result of the SELCOM review, HQDA determined that AMC would lose 9 military spaces and 1,230 civilian spaces by FY95, which included 46 AMC tenant spaces to be saved in connection with the closure

⁹⁷Historical Submission, DCS for Management and Productivity, FY89; Historical Submission, Director of Information Management, FY89.

of Fort Dix (TRADOC) and the realignment of Fort Devens (ISC). By the end of FY89, AMC had not agreed to the loss of any spaces for Fort Dix or Fort Devens. Further, AMC declined to offer any space savings for Fort Wingate, since AMC gave up the spaces at Fort Wingate beginning in FY91, as the closure of Fort Wingate was planned before the BRAC Commission study.

The AMC civilian personnel community began planning early in 1989 to carry out the personnel actions associated with base realignments and closures mandated by PL 100-526, which affected eight AMC installations: Fort Wingate Depot Activity, Navajo Depot Activity, Umatilla Depot Activity, Pueblo Depot Activity, Jefferson Proving Ground, Materials Technology Laboratory, Lexington-Bluegrass Army Depot, and Alabama Army Ammunition Plant. An estimated 2,600 civilian positions would be affected (1,700 scheduled for transfer to other locations; 900 scheduled to be eliminated). Guidance and information on civilian personnel matters, for CPOs and the work force, were prepared and issued by AMC CPD. Field assistance visits were made to four of the affected installations during the year. Implementation plans developed by affected installations include a number of initiatives to provide placement assistance for employees who would be adversely affected. The command's main objective was to minimize the need for involuntary separations.⁹⁸

Internal Review and Audit Compliance

After an assessment of conditions in AMC by General Wagner, an initiative was established to ensure that external audit recommendations were implemented on a timely basis throughout the command. He stressed his concern at the AMC Commanders' Conference and provided his plan to manage audit recommendation compliance. The plan required the HQ staff to evaluate audit compliance actions during staff visits and report the status of open audit recommendations in quarterly reviews and analyses. As a result of his increased emphasis, command managers took prompt and effective action to implement corrective measures recommended by external auditors. Of the total 1,323 recommendations made by external auditors command-wide in FY88 and FY89, corrective action was completed on 1,101 with the remaining 312 in the process of being implemented.⁹⁹

A reorganization and realignment of the Office of Internal Review and Audit Compliance established a new mission involving the Special Access Program (SAP) within the command. An audit of a SAP program found that correct procedures were followed in obtaining annual revalidation of the program, and procedures were adequate to ensure proper use of resources. However, internal security controls were not adequate and improvements were needed. Audits were made to verify actions taken to correct material weaknesses as shown in the FY 88 AMC Annual Assurance Statement.

An Audit Guide, Backlog of Maintenance and Repair (BMAR), was generated by the Command Group's concern with the development of AMC's BMAR requirements. Work on the guide was to be performed at nine AMC subordinate activities. The overall audit objective was to evaluate the BMAR process within AMC. Specific objectives included the evaluation of specificity and consistency of guidance, adequacy of reporting procedures, adequacy of BMAR determination, validity of BMAR requirements, adequacy of AMC's oversight role, adequacy of selected management aspects, and implementation of the

⁹⁸Historical Submission, DCS for Personnel, FY89.

⁹⁹Memorandum, Mr. Leonard H. Maguire for the DCS for Personnel, 25 Aug 89, subj: Award for General Wagner.

Army's Internal Control Program. The Audit Alert Network (AAN) was used to transmit audit findings with possible systemic implications.¹⁰⁰

Engineers

General Wagner's interest in installation facilities from the planning through maintenance and utilization influenced:

- * A special study, conducted to determine the real requirements to appropriately articulate the command's facility needs to Congress. Additionally, increased management of Real Property Maintenance, Army (RPMA) funding as a result of the reorganization of the HQ AMC Planning, Programming, Budgeting and Execution System (PPBES) provided increased effectiveness of resources during the funding periods;

- * A new AMC Military Construction Management plan with an up-to-date strategy, placed into effect to ensure military construction dollars were effectively spent supporting the Army's mission;

- * Family housing within the command, ensuring appropriate funding levels during a period of declining resources while simultaneously improving decision-making at subordinate levels by delegating more authority to the field;

- * The formation of an Environmental Council to increase the emphasis on environmental problems and their solutions. The command was also improving the environment and clean-up of AMC installations at an accelerated pace.¹⁰¹

With command support, thirteen AMC installations scheduled to receive Housing Operation Management System modules had their systems on-line and operational. The Furnishing and Financial modules were in the developmental stage. The Financial module operated on a personal computer similar to the Billeting module. The PC versions of the other three modules were planned for development and deployment to "smaller" installations, if economically feasible.

General Wagner was extremely concerned about energy consumption management throughout the command. However, the energy management program suffered a setback in FY88 as AMC facilities and industrial equipment consumed nearly 2 percent more energy over the prior year. Aside from pushing the command off the FY85-95 glidepath to meet HQDA's energy reduction goal, the increase was a component of an energy bill close to \$200 million for the year. The command maintained a high level of energy awareness in AMC, but growing apathy and shrinking resources for energy management were undercutting the program that had been successful in the FY75-85 period. With the RPMA funding shortfall jeopardizing even basic operations, there was little to spend on projects solely to save energy, and deferred maintenance and repair actions permitted unchecked energy losses in buildings and utility systems.¹⁰²

However, the use of facility energy was reduced 6 percent in FY89 compared to FY88, the most significant one-year reduction since the late 1970s. This decrease reflected a generally mild winter and

¹⁰⁰Historical Submission, Office of Internal Review and Audit Compliance, FY89.

¹⁰¹Memorandum, DCS for Engineering, Housing and Installation Logistics to DCS for Personnel, 25 Aug 89, subj: Award for General Wagner.

¹⁰²Memorandum, DCS for Engineering, Housing and Installation Logistics for HQDA, 7 Jul 88, subj: Waiver from Facility Energy Goals.

reduced workload. Several installations excelled in energy management and conservation, as evidenced by the number of "exceptional" ratings given by the AMC Installation and Service Activity (I&SA) during five staff visits. Indiana Army Munition plant received a Federal Energy Efficiency Award from the Department of Energy. AMC was on a glidepath to meet and possibly exceed the Army's FY85-FY95 facilities energy goal.¹⁰³

Under General Wagner, AMC continued to take the initiative and demonstrate leadership in cleaning up contamination from past activities at its installations in accordance with the Installation Restoration Program Policy guidance issued in September 1987 by Mr. John Shannon, Assistant Secretary of the Army (Installations and Logistics). The Army goal was to complete preliminary assessments/site investigations by the end of FY89 and to complete remedial investigations/feasibility studies by the end of FY92.¹⁰⁴

Command Counsel

General Wagner initiated a training program on the issue of a Federal official's personal liability for actions taken as a government employee. This was a result of the criminal prosecution of three AMC employees and the heightened interest that resulted. General Wagner realized the necessity for providing managers and supervisors with background information, legislative developments, and specific case illustrations on personal liability concerns. The program was ongoing at each AMC installation, with activity and feedback indicating that employees better understood the issue. This initiative translated into more timely and effective decision-making and mission execution, without the chilling effect that a lack of understanding could have on the vigorous exercise of government functions.

Resource Management

General Wagner was the first Commanding General of AMC to have a certified consolidated financial report for the entire command. Prior to his tenure, AMC had several General Operating Agencies with several MSC commanders certifying their own reports to HQDA.¹⁰⁵

General Wagner raised the issue of resource shortfalls and imbalances. His articulate and persuasive testimony before Congressional committees resulted in significant dollar increases, particularly in the area of supply. Severe shortages in FY87 obligation plan and funding in operation and maintenance appropriation P7S (central supply) accounts required the command to again seek reprogramming of funds, despite a decrement drill that was run earlier. As the majority of AMC personnel were paid through P7S funds, the reprogramming was necessary to cover salaries and prevent legal work stoppages. The command obligated 99.995 percent of its \$5,207,363,000 OMA monies. The reprogramming was from P7M (maintenance) to the P7S account and was in the amount of \$48.2 million. As a result of the readjustments, the command considered that a better balance was achieved between the accounts.¹⁰⁶

¹⁰³Historical Submission, DCS for Engineering, Housing, Environment, and Installation Logistics, FY89.

¹⁰⁴Historical Submission, DCS for Engineering, Housing and Installation Logistics, FY88.

¹⁰⁵BG Terrence L. Arndt, HQ AMC, DCS for Resource Management, 20 Jul 89, pp. 15-16.

¹⁰⁶Historical Submission, DCS for Resource Management, FY87.

AMC identified \$24.8 million of FY87 funds that were returned to DA to finance 1989 foreign currency requirements. The shortage in the Foreign Currency Fluctuation Account was caused by the difference between the budget and execution rates. AMC also identified \$44.8 million of FY88 funds that were issued to the U.S. Army Depot System Command (DESCOM) to cover AIF costs in depot supply operations. Use of expired year OMA funds minimized the requirement to direct current year funds for these purposes.

Faced with reduction of personnel and the lack of adequate funding, FY89 was a continuation of the same scenario. The fiscal year began with a shortfall of \$192 million, of which supply (P7S) was \$80.6 million, maintenance (P7M) was \$37.0 million, and research, development, test, and evaluation (RDTE) was \$74.4 million. In addition to this shortfall, AMC had to absorb the cost of the federal pay raise, health benefit insurance increase, new missions, and inexecutable non-personnel reductions.

An austere funded program was implemented to combat the severe payroll shortage. It included a hiring freeze, release of non-critical temporary employees, and a reduction in travel, overtime and summer hires. Savings were also generated from voluntary early retirements and voluntary leaves without pay. Congressional reprogramming of funds enabled AMC to avoid personnel actions such as furloughs. However, the level of operation and support dollars were insufficient to support the Army force structure/equipment that existed, and some important unfunded requirements were carried over to FY89, even though the provisions of the Gramm-Rudman-Hollings law were not triggered.

AMC closed out fiscal year 1989 with direct obligations totalling \$5.289 billion or 99.99 percent of available funds. Operations and Maintenance, Army reimbursable customer funding totalled \$472 million or 5 percent above prior year customer funding of \$449 million. This noteworthy accomplishment was made in spite of the late receipt of funds between August and September. This fiscal year was another year of declining resources requiring congressional reprogramming actions that were not approved until late in the fiscal year. This included \$45 million in P7S for infrastructure requirements, \$123 million for Depot Maintenance, \$32 million for Total Package Fielding in P2 and \$6 million for environmental projects in P7S.¹⁰⁷

The Operational Baseline Cost Estimate (OBCE) system was an automation initiative to improve the efficiency and effectiveness of weapon system cost estimating. Headquarters AMC was the functional proponent of this project, which benefited AMC MSCs, program executive officers, and program managers. The system provided senior officers and managers with access to life cycle cost data displayed in various formats in a timely manner which met Army cost analysis functional standards. Development of the system, towards its operational capability target of Fall 1989, was due in large part to the support and leadership environment provided by General Wagner. A hardware acquisition strategy was implemented under the Army's minicomputer contract, which reduced the cost of ADP equipment and provided architecture standardization benefits and more performance capability for the money.

Between FY87-FY89 AMC met HQDA's objective to manage civilian employment levels down to levels specified in the July FY87-FY91 POM. This involved a reduction of nearly 16,000 employees from July 1985 to September 1988. The command was faced with serious mid-year funding reductions in FY88 but it successfully managed civilian employment levels in a manner which minimized personnel turbulence in the civilian work force. AMC was the only major command to execute its budgeted civilian employment.

AMC's military strength was also reduced by nearly 170 officer positions as directed by Congress. These achievements enabled AMC to successfully meet the Secretary of Defense's directive to align manpower and force accounting systems to accurately reflect planned execution. Personnel manpower resource suballocations were established in accordance with the Five Year Defense Plan.

¹⁰⁷Historical submission, DCS for Resource Management, FY88/FY89.

The program to manage the civilian workforce to budget (MCB) was an initiative of the DA Civilian Personnel Modernization Project. The fundamental purpose of MCB was to establish fiscal accountability among line supervisors for civilian personnel costs. Participating supervisors were provided maximum flexibility to classify positions and to manage their organization and civilian personnel costs (including base salary, benefits, overtime, awards and premium pay) within a Civilian Pay Ceiling (CPC). At the end of FY89, the implementation of MCB in DCS/Separate Staff Offices had not yet been put into effect.

The CPC was developed, monitored and approved by the CPC Committee. Conventional controls such as employment level ceilings, organization guides, average and high grade controls, and supervisory ratios were rescinded. Staffing Standards Applications Section provided manpower representation on the MCB HQ AMC Working Group--the MACOM proponent charged with spearheading the MCB initiative throughout AMC. Other functional members of the AMC MCB Working Group were: Budget, Management and Productivity; Internal Review; Manpower Allocations and Civilian Personnel (Co-Proponent).¹⁰⁸

The most significant accomplishments in the area of standard systems were the phasing out of local unique accounting systems and the initiation of a standard accounting system that encompassed all areas of finance and accounting, and the initiation of standard systems in the areas of manpower and budget. The command incorporated all allotment level non-procurement reporting at a single accounts office located at Tobyhanna Army Depot. AMC experienced an immediate return on this initiative in FY87 when the rest of the Army's accounting, reporting and control systems were affected by severe changes in requirements. Under the leadership of General Wagner, AMC met or exceeded every requirement and states goal of the Army financial management staff through concerted interaction between the consolidated office and AMC installations.¹⁰⁹

Inspector General

An AMC realignment caused the transfer of the surety inspection function from Surety Field Activity to the AMC Inspector General Activity on 1 October 1988. This transfer aligned the AMC organization with that of the Department of the Army Inspector General.

In FY89, the AMC IG Activity changed the Soldier Support Inspections to Soldier Support Assistance Visits and combined them with the Assistance Program. This resulted in an actual transfer of two enlisted spaces from the Inspections Division to the Investigations and Assistance Division. The Soldier Support Assistance Team reviewed how administrative, personnel and training offices were managed under established regulations and procedures. The Soldier Support Assistance Team also reviewed soldier support in the areas of medical, dental and Army community service programs.

The purpose of the Assistance Program was to provide AMC personnel and their families the opportunity to express their opinions and provide suggestions on a broad range of policies and programs. The program's guarantee of nonattribution and freedom from retribution fostered meaningful dialogue and honest input by participants. The program's policy of leaving issues at the lowest appropriate level and not requiring formal followup reduced the perception among commanders that the program was a threat to their operations. Commanders from detachment to MSC level expressed appreciation for the candid feedback

¹⁰⁸Historical Submission, DCS for Resource Management, FY89.

¹⁰⁹Memorandum, DCS for Resource Management for DCS for Personnel, 26 Aug 89, subj: Award for General Wagner.

provided to them. Positive outcomes of the program ranged from improvements in operating hours for support activities to improved military police assignments to AMC installations.¹¹⁰

Personnel Management

A test to manage the civilian force to budget occurred during the tenure of General Wagner as part of the DA Civilian Personnel Modernization Project. The test began in FY88 and was originally scheduled to be in effect for 2 years. Problems in starting the test caused the command to use FY88 as the base year and conduct the test during FY89 and FY90, using Natick Research, Development and Engineering Center and Red River Army Depot as test sites. The Department of the Army decided that to extend the test in FY90 to include additional installations. AMC requested the inclusion the U.S. Army Troop Support Command, Combat Systems Test Activity, Seneca, Tobyhanna and Anniston Army Depots, and U.S. Army Security Affairs Command (USASAC).

The Quality of Life program was strongly supported by General Wagner and several improvements were made in the quality of life of AMC Soldiers, their families and civilian employees. From FY87 to FY89, \$58.7 million were spent to support morale, welfare and the construction of recreation facilities throughout the command. Initiatives were developed to enhance support to AMC employees who previously had not received benefits under quality of life activities. Alternative means for financial support for these programs were investigated and proposals were developed for consideration by HQDA.

The reduction of job related injury and illness claims, human suffering, lost production, and costs associated with the workers compensation program was one of the Commanding General's highest priorities. HQ AMC had been active for the past several years in administering an aggressive proactive workers compensation cost reduction program command-wide. Some of the major actions taken included:

- * Announcement of FY89-FY93 DA 2 percent cost reduction goals involving the Safety Office, Civilian Personnel, Medical Services, and Resource Management in August 1988;
- * Command-wide Federal Employees Compensation Act workshop in February 1989 which was attended by 65 representatives of Civilian Personnel, Safety, Medical Services, and Resource Management;
- * Briefing of AMC Recruitment and Placement Branch Chiefs in February 1989 on DA Civilian Resource Conservation Program (CRCP) Goals, reduction efforts, and required assistance;
- * Issuance of AMC Commanding General policy letter to Commanders in support of CRCP;
- * Establishment of an automated program to monitor quarterly progress at installations, and to provide the data to MSCs and installations.

On 29 April 1988, the Under Secretary of the Army selected the Air Force Personnel Data System-Civilian (PDS-C) as the Army Civilian Personnel System (ACPERS) in lieu of an Army contractually developed system. The decision was based on functional engineering and programmatic analysis and associated risks. Plans called for the system to be operated at the Air Force Computer Service Center located in San Antonio, Texas. The existing UNISYS 5000/70 CPU purchased for Office Automation was to be used by the civilian personnel offices to operate ACPERS. Effective 5 July 1989, the installation level ACPERS name was changed to the Field Army Civilian Personnel System (Field ACPERS). The HQDA system was changed to Headquarters Army Civilian Personnel System (HQ ACPERS). The installation

¹¹⁰Historical Submission, Inspector General and Inspector General Activity, FY89.

level civilian personnel offices' connectivity was installed directly into the Air Force Computer Service Center in San Antonio. Corpus Christi Army Depot was as the Pre-Deployment Site and the Software Acceptance Test site and Letterkenny Army Depot was the Lead Deployment Test site and Nonappropriated Fund Test site.

The Career Management and Development Office was responsible for oversight of AMC's centralized intern recruitment program. This command's FY89 allocation totalled 1,516 spaces in 23 career programs. DA resourcing of \$38 million covered intern salaries, training and permanent change of station costs. Active and aggressive recruiting through use of college campus visits and other sources, resulted in ending FY89 with 1,516 interns on-board and a total obligation of all allocated funding.

On 8 February 1989, the Under Secretary of the Army designated the acquisition portion of the Logistics and Acquisition Management Program (LOGAMP) Competitive Development Group, as well as the Materiel Acquisition Management Program (Military), as the basis, in part, for establishing a pool of qualified acquisition managers to fill critical acquisition positions in Army. In addition, the Under Secretary announced the expansion of LOGAMP to include the following career programs: Communications, Automatic Data Processing, Engineers and Scientists (Resources and Construction) and Comptroller. The DMR and the Army Management Review (AMR) further stressed the importance of a highly trained acquisition work force with the establishment of the Army Acquisition Corps (AAC). The objective of this segment of LOGAMP was to provide a structured systematic program for the selection, development, training and retention of selected acquisition managers to occupy critical positions in Program Executive Offices; Program, Project and Product Management Offices; Matrix Support Command organizations; procurement command headquarters; and Headquarters, Department of the Army.

In 1988 AMC signed a contract with Texas A&M University for the Advanced Engineering Training Program at the U.S. Army Logistics Management College's (ALMC) School of Engineering and Logistics, Red River Army Depot. This expansion of the existing 12-month engineering intern program to 18 months would provide the Army the highly skilled civilian engineers necessary to handle the rapidly expanding technology as the Army moves into the 21st century.¹¹¹

Program Analysis and Evaluation

The DCS for Program Analysis and Evaluation had responsibility for running AMC's automation resource prioritization process which was begun in 1988. Guidance was provided to the field with detailed requirements for building the HQ AMC data base. All information received was assigned to one of four System Review Committees that separately reviewed and prioritized requirements within their area. The DCS for Information Management reviewed, integrated and prioritized the results of the committees which were approved by the Command Group and distributed to the field as program guidance. In an environment of increasingly scarce resources, this process improved ADP management by providing command visibility into core requirements and acquiring command agreement on AMC's requirements. It further improved the insight of personnel involved with automation and enabled them to ensure the proper allocation of resources and provide better responses to Congressional demands.

At the request of the Command Group, an information management initiative was undertaken. An evaluation was completed on the high-speed Local Area Network (LAN) configurations that allowed rapid omni-directional Multi-System Disc Operating System (MSDOS) based data and graphics communications and storage within the Command Group. Procurement action was initiated to construct a Command Group sub-LAN with connections for the DCS's for Resource Management and Program Analysis and Evaluation.

¹¹¹GEN Wagner, "The U. S. Army Materiel Command, 1988 in Support of the Soldier in the Field."

Software development and associated training was also initiated, and a LAN bridging of a 3COM signal across Sytek was demonstrated by the DCS for Program Analysis and Evaluation.

At the direction of General Wagner, an analysis of the May 1988 BPRR submissions from the major subordinate commands and the separate reporting activities (SRAs) was made to determine to what degree requirements were presented as AMCLOG 21 (Army Materiel Command Logistics 21) deficiencies in the most recent AMCLOG 21 Mission Area Development Plan. The study presented the following recommendations for the improvement of the AMCLOG 21 process:

- * Better cooperation between functional proponents and budget/programming experts to enable AMCLOG 21 requirements to reach funding documents;
- * Better communication between MSCs and the headquarters in tracking all corrective actions;
- * Rescheduling of AMCLOG 21 events to permit the biannual Materiel Acquisition Development process to correspond with the biannual BPRR cycle;
- * Modification of the AMCLOG 21 concept to allow the inclusion of major Operations and Maintenance, Army deficiencies.

Between FY88-FY89 the command developed and implemented a plan for prioritizing AMC's OMA Management Decision Packages (MDEPs) to assist in analyzing program trade-offs in the Program Objective Memorandum (POM), formerly the Program Analysis and Resource Review. These MDEPs had been difficult to defend against reductions in the FY90-94 POM build, and were difficult to manage by HQ AMC functional proponents. Restructuring the MDEPs required extensive coordination with HQDA staff representatives as well as AMC functional counterparts to ensure that the resulting Program Element or functional MDEPs met both AMC's and HQDA's requirements.

This project included developing methodology for incrementing OMA MDEPs, selecting an analytical process to evaluate and rank the MDEPs, and selecting decision modeling software to automate the process. The task was particularly difficult for a variety of reasons, including the newness of the concept, resistance from some MDEP proponents, time constraints, AMC's practice of managing resources by program element more than by MDEPs, and the lack of familiarity between fielding and sustaining MDEPs and the remaining OMA MDEPs. After the effective date for implementation of the restructure, the DCS for Information Management presented a complex briefing to HQ AMC resource managers who required an understanding of the revisions in order to track and manage their resources.

Total Quality Management

In the context of the "way we do business," General Wagner stressed support of a total quality management (TQM) initiative at the beginning of his tenure as Commanding General. He reiterated in an memorandum his strong support and commitment to the concept of TQM on 28 November 1988 and announced the appointment of Stanley J. Alster as his Special Assistant for Total Quality Management. He also chaired the AMC Total Quality Management Executive Steering Committee.

On 6 January 1989, HQDA established the Army Total Quality Management Committee (ATQMC) to assist the Under Secretary in development of guidance, policy, methodology, programs and products to support TQM implementation. The committee also provided a forum for the exchange of ideas, lessons

learned and coordination of activities.¹¹² General Wagner represented AMC on the ATQMC and attended the first meeting on 26 May 1989, accompanied by his Special Assistant for TQM. At the second meeting on 7 July 1989, the Under Secretary directed AMC and TRADOC to brief their experiences and lessons learned with TQM training at the next meeting.

HQDA issued the Army TQM Implementation Plan for Acquisition in October 1988.¹¹³ The AMC Implementation Plan, issued 18 July 1989, was modelled after and functionally supported the Army Plan, and went beyond the Army plan in encouraging across the board implementation. It had a broad based plan with very general guidelines, thereby affording each commander maximum flexibility to design implementation strategies. The plan also provided the opportunity to apply tools that best served the needs of the organization. General Wagner urged each commander to demonstrate his willingness to adopt TQM principles by committing sufficient time and resources to make them work.¹¹⁴

Equal Opportunity

General Wagner recognized that the quarterly management review indicated the command had exceeded the hiring goal of women and minorities in senior positions, but his concern was why was the goal so low.

There is no question that in some areas we still have problems finding qualified women and minorities to take these positions, but I think we have to continue to push that.

Unfortunately, we are competing with industry in this arena, too. Industry is pushing hard to increase their hire of minorities and women, so it's not a matter of us just going on the street and finding them available. In fact, it's tougher to find well qualified women and other minorities, because industry pays them higher salaries than we do.

We've made some breakthroughs, particularly in women in senior positions and SES positions, but the overall improvement has been minuscule and we need to continue to work in that area.

I encourage women in the military to get into military acquisition. In the past, that hasn't been true. In fact, I think we just selected our first PM who is a woman. In the past, as you looked around at Materiel Acquisition experts, you saw nothing but men in green suits.¹¹⁵

In FY89 the Office of Equal Opportunity was in the first operational year of a five-year affirmative employment program plan for minorities and women. The office scheduled the preparation of yearly updates and accomplishment reports which will be submitted through the Department of Army to the Equal Employment Opportunity Commission.

The completion of the initial prevention of sexual harassment (POSH) training within the command was reported to HQDA in September 1989. This was a major accomplishment for AMC, which had trained more than 100,000 soldiers and civilians in the command since the inception of the program in 1981.

¹¹²Memorandum, GEN Wagner to Distribution, 18 July 1989, subj: AMC Implementation Plan for TQM.

¹¹³HQDA, Army TQM Implementation Plan for Acquisition, October 1988.

¹¹⁴GEN Wagner to Distribution, 18 July 1989, subj: AMC Implementation Plan for TQM.

¹¹⁵GEN Wagner Interview, HQ AMC, 14 Apr - 26 Sep 89, pp. 51-52.

Most of the goals adjusted to correct underrepresentation of women and minorities in the AMC work force were achieved. The AMC full-time work force strength was increased by 3,376 in FY89. Adjusted goals were met for African American and Hispanic men and Caucasian women. Goals were not met for Asian/Pacific Islanders and no goals were established for Native Americans. The major area of gross underrepresentation was in AMC's employment of women. Although there was some underrepresentation of African American and Hispanic men, that was not reflective of a manifested imbalance.

Headquarters Installation Support Activity

The Headquarters Civilian Personnel Office (CPO) was designated as a "Model CPO" in April 1986. This project was designed to ascertain if better service and higher productivity would result if the office was staffed 100 percent according to Manpower Staffing Standards System requirements, if badly needed automation was obtained and if facilities were improved. In May 1989, the final evaluation of the project was completed. Efforts devoted to this project resulted in greater management support and improved relations between the CPO and its customers.¹¹⁶

Significant progress was made in the placement of handicapped and severely handicapped individuals. HQDA also established an employment goal of two percent of the work force that would be composed of severely handicapped individuals by 1992. The achieved percentages were:

Accession	DA Goal	HQ AMC Actual
Handicapped	4.0	10
Severely Handicapped	1.5	07

Source: Historical Submission, Office of Equal Opportunity, FY89.

There were 185 (8.58 percent) handicapped employees and 49 (2.27) severely handicapped employees by the end of the fiscal year. The severely handicapped representation already exceeded the 1992 goal of two percent.

As a result of extremely critical evaluations of the civilian phase at the Army Management Staff College (AMSC), a pre-arrival orientation phase was developed. It requested that each servicing CPO, with personnel attending AMSC, provide the selectees an orientation about personnel management prior to their arrival at AMSC.

The issue of the availability of P7S funds required to support the command was a serious concern which was addressed by General Wagner. The implementation of revised civilian personnel policy increased the total strength to 98 percent of authorization. Based on a May 1989 DA Program Budget Guidance (PBG), it appeared that headquarters would be able to fund only 92 percent of the FY90 manpower

¹¹⁶AMC HQ CPO Memorandum for The Director of Civilian Personnel, Office of the DCS for Personnel, 21 May 1989, subj: Assessment of Model CPO Project.

authorization. In an attempt to lower on board strength at the beginning of FY90 to a level where personnel could be paid, the Chief of Staff approved a total civilian hiring freeze of people outside of the headquarters, unless he approved an exception on a case by case basis. By the end of the fiscal year, the on-board strength level was reduced to 95 percent of authorization. This hiring freeze was scheduled to continue into FY90.

A significant completion of cataloguing and accountability of Automated Data Processing Equipment (ADPE) posted in the HQ AMC Property Books was accomplished in March 1989. This project ended a long standing accountability problem within the headquarters. Accountability of this single commodity was approximately 50 percent or \$6.5 million of the total property book value of \$13 million. With constant upgrades and enhancements to ADPE, it was a difficult asset to manage and required constant liaison and coordination with the Director of Information Management (DOIM) to keep ADPE accountability at the highest possible level.¹¹⁷

Surgeon

At the direction of the Commanding General, the Surgeon coordinated and monitored requests for health hazard assessment (HHA) support during FY89 from program executive offices, program managers, and AMC's major subordinate commands. This was a 135 percent increase in technical workload. Efforts included reviewing data, consulting with the AMC MSCs and PMs, coordinating with HQDA, other Services, the AMC system staff engineers, U.S. Army Training and Doctrine Command (TRADOC), and the Army Medical Department to ensure that the HHA program was providing required services. In addition, effort was expended to ensure that the HHA reports resulted in timely medical input to control and eliminate health hazards for all developmental and non-development items of equipment. The recommendations contained in the HHAs provided specific administrative and engineering controls to reduce the adverse health impacts to operators and maintainers of these systems.

The HHA officer assisted The Surgeon General in prioritization of health hazards, conducted by the U.S. Army Medical Research and Development Command. This officer also provided HHA input to the new AR 40-10, *The Army Health Hazard Assessment Program in Support of the Army Materiel Acquisition Decision Process*; AR 70-1, *System Acquisition Policy and Procedure*; AR 385-16, *System Safety Engineering*; and to MANPRINT and the Materiel Release Process for NDIs.

The Surgeon continued to coordinate key information to support the medical assessment of the Bradley Fighting Vehicle System (combustion products because of muffler/dual AFES), the M40 and M43 Protective Mask (skin sensitizer/hood), STEPO-I (chemical agent suit), XM215/216 Modular Propellant Charges (BOP, combustion product), Source Selection Boards for the Line-of-Sight Forward Heavy, Family of Medium Tactical Vehicles, Advanced Antitank Weapon System-Medium, M109 Howitzer Improvement Program (HIP), NBC Reconnaissance Vehicle, LONGBOW APACHE, LAW Users Test, and numerous training devices and new munitions.

The HHA officer provided, assisted with, or arranged for medical support for Army materiel systems that had identified health hazard issues. He ensured that these health hazard issues were appropriately evaluated, eliminated or controlled without adversely impacting acquisition cost or schedules.

The HHA officer developed and manually loaded the new HHA data base into the AMC system. He served as the AMC Command Surgeon's point of contact for the Medical Functional Area Analysis and the

¹¹⁷Historical Submission, Headquarters Installation Support Activity, FY89.

Deployable Medical Systems. He also served as a member of the Howitzer Improvement system safety working group and the technical integration working group for the PM Clothing and Individual Equipment.

With the institution of Surety Management Reviews (SMR) of Chemical and Nuclear installations by this headquarters, a new means to obtain medical support was needed. The Surgeon's Office did not have sufficient personnel to participate on both IG and SMR visits. Recognizing that few medical officers were involved in Surety operations, even though many military hospitals have contingency plans to support AMC installations in the event of an accident, and that all the clinics on AMC installations belonged to a larger Army hospital, it was decided that the base of Army Medical Department (AMEDD) personnel supporting IG inspections and SMR's had to be widened.

The Surgeon's office put forward a plan which was accepted by Office of The Surgeon General (OTSG) and HSC (Health Services Command), to have the Preventive Medicine Service of the supporting Medical Department Activity/Medical Center (MEDDAC/MEDCEN) participate in the SMR and a physician from the USAEHA (U.S. Army Environmental Hygiene Agency) participate in IG inspections. This would do several things. First, it would force the supporting MEDDAC/MEDCEN to become actively involved in the surety program at the clinic level. Next, it would broaden the number of physicians with surety experience. Lastly, it would create a layering of responsibility in successively higher levels within HSC.

The Surgeon participated in six surety and operational inspections at AMC installations. During these inspections, various aspects of medical support to the surety program were evaluated which included occupational health surveillance, training, health care provided during emergency exercises, records management, and external support to the installation from civilian and military medical activities. The Surgeon also served as liaison with HSC in correcting medical deficiencies identified during inspections.¹¹⁸

Management and Productivity

Emphasis was placed on the GAO standards for Internal Controls in the Federal Government as published in Chapter 2 of AR 11-2, *Internal Controls*. A network of command and installation internal control program administrators accomplished essential tasks to ensure the success of this program. Approximately 20 communications were issued to field administrators and field activities that provided guidance or pertinent program information. Special emphasis was placed in providing updates to the Management Control Plan.

A distribution system for transmittal of Audit Advisory Reports to Internal Control Administrators of major subordinate commands and separate reporting activities was established. This system ensured that administrators were aware of existing audit advisory reports available for the appropriate action.

A "Material Weakness Point of Contact Guide" was developed and distributed. The guide outlined the responsibilities and procedures for documenting and reporting on material weaknesses and provided advice on dealing with auditors reviewing the status of material weaknesses.¹¹⁹

Pine Bluff Arsenal was the first installation in AMC to implement the command's Productivity Enhancements, Efficiencies, and Rewards (PEER) program. Under PEER, both the Pine Bluff installation

¹¹⁸Historical Submission, Office of the Surgeon, FY89.

¹¹⁹Memorandum, MG Harrison for Secretary of the Army, 6 Oct 89, subj: FY89 Annual Assurance Statement on Internal Controls.

and its employees were earning significant cash rewards for their commitment to the complementary goals of quality and productivity.

During a relatively short study period of 3 months, Pine Bluff Arsenal developed and structured a plan to improve quality management and to reduce its operating costs for a constant level of work. Specific enhancements were placed in the plan for all elements of the Pine Bluff organization. Proposed efficiencies will be phased in over three years to limit personnel dislocations. The plan consolidated all quality and productivity efforts of the arsenal into a focused effort to achieve specific savings goals.

PEER employed a concept of hard dollar savings. This meant that money for awards could only be generated by reduced expenditures. Baselines for workload, personnel costs, and non-personnel costs were established prior to each fiscal year. These baselines were compared with actual production and expenses after the conclusion of the fiscal year. If the baseline workload had been performed but not all of the baseline budget spent, then monies were available for PEER rewards. To ensure proper management of the program, Pine Bluff's commander entered into a written contract with AMC's Chief of Staff to execute the approved PEER plan. As an additional control, the internal review and audit compliance organization of Pine Bluff's headquarters had the responsibility to audit the entire process from the development of baselines to the calculation of awards.

PEER provided for the creation of an employee award pool composed of 50 percent of the personnel-related savings. The installation commander retained control of 50 percent of the non-personnel savings for installation investments or supplement to the employee award pool. The balance of the savings was normally to be returned to HQ AMC. Civilian employees earned a share in the award pool for each full month of employment during the fiscal year in which hard dollar savings are generated. The dollar value of each share was the same, regardless of an employee's pay grade. This equal or peer-type relationship for the sharing of PEER savings motivated many Pine Bluff employees to show extraordinary initiative to improve Arsenal operations.

Pine Bluff's PEER plan specified aggregate budget reductions of 14 percent for the FY89 through FY91. The audited results for FY89 were impressive. Fifty-nine full-time positions were permanently eliminated while production quality was maintained at very high standards. Over \$2.4 million in non-personnel savings were achieved by reducing purchased services, overtime, travel, supplies, and equipment. Total savings of \$3,991,932 were divided as following manner: \$1,995,966 (50 percent of total) refunded to HQ for application against a FY90 budget reduction, \$816,020 retained by the Pine Bluff commander for installation investments, and \$1,179,946 distributed to the arsenal work force. Full-time employees, who worked all 12 months in FY89, received PEER awards of \$874 each.

PEER permitted installations an opportunity to focus on the TQM philosophy during this period of declining budgets. Employees participated in and were rewarded for working together to systematically reduce operating costs. The DCS for Management and Productivity was the POC for the PEER program.

Under General Wagner AMC continued to be a significant force in the Army Ideas for Excellence Program (AIEP), formally the Army Suggestion Program. In FY89, it had tangible savings of \$21,467,345 with \$1,128,675 awarded to 4,526 employees. The adoption rate was 29 percent and the participation rate was 14 percent.

During FY89, HQDA decided to merge the Model Installation Program (MIP) with the Army Suggestion Program (ASP). The change was being formalized in a new Army Regulation, *Army Ideas for Excellence Program*. The two programs were merged mainly to eliminate duplication of effort. The MIP and the ASP had been processed in basically the same manner since October 1987. Established in 1984 by the DOD, MIP was designed to eliminate unproductive or obsolete regulations and procedures. It

allowed installation Commanders to test an idea at their command for a specified period of time. Under the AIEP, ideas will still be tested during an evaluation process.

Throughout the command, emphasis was being put on increasing participation in AIEP, particularly military participation. Events being planned to facilitate this goal included month-long promotions, picnics, and articles in local official newspapers. AMC held a workshop which included participants from all of the MSCs, members of the DA staff and other major Army commands. The workshop was effective in communicating and resolving common problems, clarifying policy issues and sharing ideas to better administer the program. At the urging of all participants, headquarters planned to make this event an annual affair.¹²⁰

Information Management

Since Congress had taken an active interest in the management of automation in the Army, the Commanding General made automation one of his top priorities. A Systems Management Office was established as a focal point for the management of automation, reporting only to the command group. Several initiatives were started which included the development of a Strategic Plan, Information Architecture, and the successful review of AMC's largest automated system by the Defense Major Automated Information System Review Committee (MAISRC). However, the most important initiative was the prioritization of the command's entire automation program and the management of resources for automation in accordance with command-wide priorities.¹²¹

The Network Management Office (NMO) was created by DOIM in July 1989. The initial mission of NMO was to oversee and coordinate the de-installation and re-installation of HQ AMC's Local Area Network (LAN). NMO provided an environment that would enable HQ AMC to communicate and operate a fully interoperable and integrated information network, transparently linking all levels of management and administration supporting the information area. The NMO also provided fault management, accounting management, configuration management, performance analysis, security, and resource management of the HQ AMC local area network (LAN).

The Hughes LAN System was awarded a contract on 29 September 1989 to correct deficiencies in the installed cable plant. The original LAN installed in the headquarters building used a non-plenum approved cable backbone which did not meet the fire safety code of the City of Alexandria. The non-plenum cable was scheduled to be removed by December 1989, and a new plenum approved cable was to be installed and operational by January 1990.¹²²

The AMC VENUS (Video Enhanced User System) was the first DOD, Video Teleconferencing (VTC) network to become operational on the Defense Commercial Telecommunications Network. Since activation in April 1986, AMC has realized a substantial savings in TDY expenditure (e.g., 3 days TDY could be accomplished in a half-day meeting). Further, AMC reaped other benefits from VENUS teleconferencing such as increased productivity and elimination of the fatigue factor resulting from travel. The dollar savings derived from the establishment of VENUS was significant, and this trend will continue as the network expands in the years ahead. One important advantage of VENUS was that it compensated for severe travel limitations imposed by budget cuts.

¹²⁰Historical Submission, DCS for Management and Productivity, FY89.

¹²¹Memorandum, Inspector General to DCS for Personnel, 22 Aug 89, subj: Award for General Wagner.

¹²²Historical Submission, Director of Information Management, FY89.

During FY89 AMC added two new VTC studios to bring its total to 13. The new studios were activated at the Belvoir Research, Development and Engineering Center at Fort Belvoir, Virginia, in March 1989, and at the Armament Research Development and Engineering Center at Picatinny Arsenal in Dover, New Jersey, in April 1989. The opening of these facilities further expanded AMC's capability to reach out to its subordinate commands through teleconferencing and enhanced multiple conference capabilities.

The Natick Research and Development Center was also scheduled to join the VENUS network. On 28 September 1989, the Defense Communications Agency (DCA) signed a Digital Communications Terminals Network (DCTN) contract with AT&T for the turn-key construction of the Natick facility. Construction of the studio started on 15 October 1989. Activation of the studio was scheduled for March 1990.

DCA and AMC worked closely together on the possibility of extending the teleconferencing capability to selected Defense contractors to enable the PEOs/PMs located at AMC activities to hold video conferences with their contractors. On 28 September 1989, DCA signed a DCTN contract with AT&T for a gateway that will allow DOD contractors connectivity into the AMC VENUS network. Installation was scheduled to commence in December 1989, with the network becoming operational in January 1990.

Through the leadership of General Wagner, the DCS for Information Management in September 1988 established an AMC Knowledge Engineering Group for the purpose of developing expert systems for the headquarters. As a result of that effort, the group designed, developed, and demonstrated three expert systems to the Chief of Staff in December 1988. The systems involved were OCONUS Travel, Conference Site Selection Model, and Threat Analysis. Two of those systems, OCONUS Travel and Conference Site Selection Model, were fielded throughout HQ AMC. In January and March 1989 the Advisory Group was reconvened to exchange technical information and review the HQDA Productivity Investment Funding (PIF) submissions for duplication. At the January meeting, the group established an Artificial Intelligence (AI) and Expert Systems (ES) Standards Team and developed a generic criteria by which an expert system shell can be selected for use in developing a specific system.

The use of Artificial Intelligence/Expert Systems (AI/ES) throughout AMC was supported by General Wagner and three funding sources were identified for the field to use while pursuing their Artificial Intelligence/Expert Systems. These sources, managed through the appropriate channels, were the: Productivity Investment Funding (PIF); Budget Program Resource and Review (BPRR); and the HQDA AI Center. In July 1989, an AI/ES Management Plan was developed for HQ AMC. This plan included the transition of the developed expert systems to the HQ AMC DOIM. In September 1989, a developed AMC AI Master Plan was submitted to LABCOM.

The necessity to optimize technical coordination for AMC systems influenced General Wagner to establish the Information Management Systems Review Committee to provide a structure and management base for common support systems. The committee managed the technical aspects of AIS applications, provided focus to technical integration, and managed the IMA functional proponentcy. The IMA functional proponentcy included all five disciplines within the IMA: automation, communications, records management, visual information, publications and printing. It also managed the sub-discipline pertaining to technical libraries.¹²³

¹²³Historical Submission, DCS for Information Management, FY89.

Safety

General Wagner was extremely concerned about the number of military injuries throughout the Command. He was convinced that a 7 December 1987 memorandum concerning military injuries had little impact because in FY88 only six fewer AMC soldiers were injured compared to the 112 in FY87. In a 3 February 1988 memorandum he reemphasized suggestions made to protect soldiers at work, at play, and while driving their privately owned vehicles.¹²⁴

His personal involvement in AMCCOM, particularly at Radford Army Ammunition Plant in January 1989, resulted in four significant recommendations made to Hercules, the operating contractor. Following General Wagner's direction, studies resulted in reducing management layers between employees and top management, and resulting in the application of a safety performance attitude survey to identify strengths and weaknesses in the plant employee safety awareness. As demonstrated by his personal involvement with Radford AAP (Army Ammunition Plant), accident prevention, particularly explosive accident prevention, was a continuing element of the Commanding General's leadership. For AMCCOM, the number of explosives accidents declined by 41 percent over the last fiscal years. Injuries related to explosives during the same period declined by 36 percent.¹²⁵

Under General Wagner the command achieved an aircraft accident rate of 3.38 percent after flying 41,966 hours during FY88. The rate reflected the loss of one TECOM JAH-1F helicopter and its crew of two during a 16 May 88 mission at Fort Rucker, Alabama. During FY89 the command had no Class A accidents and earned a Zero Class A rate based on 35,095 hours of flight. One Class C accident resulted in a 2.85 Class ABC rate based on the same flying hours totals.¹²⁶

At the U.S. Army Aviation Systems Command (AVSCOM), the continuous emphasis and thrust by General Wagner enabled the MSC to reap both fiscal and personnel savings. The lowest aviation accident record in the history of the Army was achieved during FY88 and it was attributed to the key involvement of the Commanding General.¹²⁷ Specific accomplishments under the leadership of General Wagner were:

- * The Army five year accident reduction exceeded its goals.
- * Materiel defective direct and contributing causes to accidents continued to decline to less than 20 percent in major accidents.
- * Reduction of risk programs such as AVSCOM's Safety of Flight program messages removed risks to the user by rapid communication.
- * The flight safety parts surveillance of user parts enhanced engineering life predictions to include mission variation and environmental impact feedback.
- * Lessons learned from fielded equipment were being documented to impact future designs in aviation to reduce risk and improve safety.

¹²⁴Memo, GEN Wagner for Distribution, 3 Feb 89, subj: Military Personnel Injuries.

¹²⁵Memorandum, AMCCOM SGS to HQ AMC, 31 Aug 89, subj: Award for General Wagner.

¹²⁶Historical Submissions, Safety Office, FY88/FY89.

¹²⁷Memorandum, HQ AVSCOM SGS to HQ AMC, 29 Aug 90, subj: Award for General Wagner.

* Hazard tracking teams for each fielded system will allow hazard rates to be validated through life cycle management.¹²⁸

FY89 was the fifth and final year of the Presidential Three Percent Injury Reduction Program. AMC achieved a 13 percent reduction over the five year program. Although the reduction was short of the 15 percent goal, it was impressive both because AMC failed to reduce injuries during the first two years and because the reduction achieved throughout the Army was only 7 percent.

For the fourth straight year, AMC Safety efforts and accomplishments reflected reduced design or materiel defect accidents reported by soldiers in the field. This reduction was in absolute terms as well as a percentage of all reported accidents.¹²⁹

¹²⁸AVSCOM Safety Office Point Paper, 24 Aug 89, subj: AVSCOM Input to AMC Commander's Accomplishments.

¹²⁹Historical Submission, Safety Office, FY89.

Chapter II

Resource Management

Office of the Deputy Chief of Staff for Resource Management

Organization and Key Personnel

The DCS for Resource Management lost five civilian spaces which were held over from the 1988 ten percent reduction, and another space to the Special Assistant for Total Quality Management. The DCS also transferred 10 spaces to the Chief of Staff on 1 December 1988 as a result of an Internal Review and Audit, and lost one military space from its Budget Division. The DCS gained four spaces from the Army Management Headquarters Activity, and established the Resource Management Operations Office. An authorization of seven military and 240 civilians, totalling of 247 on 30 September 1988, was reduced to six military and 228 civilians, totaling 234 at the end of FY89. On 14 September 1989 BG Virgil Amos Richard took over the position of DCS from BG Terrence L. Arndt, who had served in that position from 16 August 1986 to 31 July 1989. Gary E. Tagtmeyer was the Assistant DCS for Resources Management in FY89.

At the end of FY88 AMC had an actual command-wide civilian strength of 103,501. By the end of FY89 this had risen to 106,247. This was 1,200 above the established target of 105,047. This overage was due to the policy of allowing local commanders to manage manpower resources, in the year of execution, according to funds available. The excess personnel on board were concentrated in Army Industrial Fund (AIF) and Research, Development, Testing and Evaluation (RDTE) funded organizations where reimbursable dollars paid most of the bill.¹

Cost Analysis

Operational Baseline Cost Estimate (OBCE). Coordination of final deliveries and installation of hardware at 40 designated major subordinate commands (MSCs) and program manager (PM) sites were completed, and continued development of OBCE software through the support contractor, CALIBRE Systems, was accomplished. In conjunction with MSC Study Advisory Group (SAG) members and technical representatives, a series of software tests were conducted to determine the operational acceptability of the OBCE software (i.e., Fall 1988, Beta Test; Spring 1989, Acceptance Test; and Summer/Fall 1989, Pilot Systems Test).

These tests contributed greatly to the sharing of ideas, fixing of software bugs, and identification of enhancements. The SAG meetings were held on 2 November 1988 and 6 June 1989, and a special independent review by the ORACLE Company of software architecture and system performance was completed. Additionally, a number of videoteleconferences with MSC representatives were conducted to facilitate coordination and integration of OBCE program planning, testing, and execution. Approval for the

¹DCS for Resource Management Historical Submission, FY89. Hereafter, all information for this section is from that source unless otherwise indicated.

release of 1.0 OBCE Software was scheduled for first quarter of FY90. This milestone will be followed by approximately 10 one-week classes to train professional cost analysts within AMC on implementing OBCE operating procedures.

Operating and Support (O&S) Cost Reduction Initiative. On 29 March 1989, HQ AMC hosted a joint AMC-TRADOC meeting on O&S Cost Reduction. Several PMs and MSC representatives briefed AMC and TRADOC Commanders regarding on-going projects to reduce the cost O&S of Army systems. Subsequently, a Joint AMC-TRADOC General Officer Steering Committee was created to establish goals, determine organizational responsibility and review selected projects. A HQ AMC Deputy Chief of Staff (DCS) level Advisory Group (and corresponding Working Group), with participation invited from the DA Staff (ASA[RDA], DCSOPS, and DCSLOG)², determined criteria for project selection, established priorities and trade-offs, addressed possibilities for financing, and implemented procedures for administering the program.

The Assistant DCS for Cost Analysis had the lead on this initiative through the establishment of the Advisory Group. The Advisory Group was co-chaired by the DCS for Development, Engineering, and Acquisition and DCS for Supply, Maintenance, and Transportation. In conjunction with the O&S cost reduction initiative, briefing materials were prepared for the Commanding General's presentation at the 1989 Fall Army Commanders' Conference (ACC).

Additionally, HQDA tasked AMC to include O&S cost data for 50 systems in the Field Long Range Research, Development and Acquisition Plan (LRRDAP). AMC requested inclusion of only a limited number of systems to resolve any problems with data base software, information gathering, and cost data analysis. The DCS for Resource Management defined the cost elements for the submission, and provided guidance and direction to the field. Prior to the next LRRDAP, the command will train more players, refine any software problems, and develop a methodology with the capability to respond quickly to changes in definition, op tempo, and quantity during reviews of mission needs and affordability decisions, giving the complete cost picture.

Cost Analysis Program, AR 11-18. HQDA was combining policies and guidance of cost and economic analysis programs into one regulation. Data consolidated from MSC Cost Analysis Offices was provided for the DA draft regulation. After the final review was completed, distribution of the regulation was expected by the end of the calendar year.

Cost Validation, AMC-R 37-4. A DESCOM supplement to the AMC validation regulation, *Cost Estimate Control Data Center (CECDC) Activities*, AMC-R 37-4, dated 4 June 1987, was approved. In addition, a change to the TROSCOM Supplement which clarified the validation role of TROSCOM's subordinate activities (i.e., their subordinate activities were responsible for validating estimates developed by their command and periodically reporting the results to TROSCOM to avoid duplication of effort). AMC reviewed TACOM's recommendation for a fourth level of validation to accommodate cost estimates of new technologies. The command recommended that TACOM provide appropriate caveats in their validation responses and recommend methods of improving future updates rather than create a new level of validation.

Automated Information Management Systems. A briefing to AMC attendees at the Information Management Policy Conference on 9 August 1989 provided an overview of AMC Cost and Economic Analysis Policies and their relationship to Information Management systems. The briefing included the background leading to present policies, a review of related OSD/DA and AMC policies to Information

²Assistant Secretary of the Army (Research, Development and Acquisition), Deputy Chief of Staff for Operations, and Deputy Chief of Staff for Logistics.

Management systems economic analysis requirements, responsibilities at each level of command, cost data requirements for preparing an economic analysis (EA), weaknesses and pitfalls while performing an EA, validation requirements, points of contact, and EA training opportunities for the conferees.

Integrated Logistics Support (ILS) Funding Guide. The Materiel Readiness and Support Activity (MRSA) finalized and published the ILS Funding Guide, as AMC-P 700-12, in collaboration with AMC. The guide interrelated concepts and definitions from the Army Cost Analysis functional area with the logistics community. Shortly after publication, the DCS for Resource Management expressed concerns about several of the definitions of appropriations in the guide, and recommended that MRSA revise them so that they did not conflict with official budgeting and funding guidance. MRSA was to incorporate the changes into the guide during the next fiscal year. However, the revisions were furnished to the AMC Cost Analysis community in July 1989.

Cost Analysis Resource Reference System. Based on an OSD initiative, the Army participated as a member of a Tri-Service Cost Research Group with the Air Force and Navy. The purpose of this effort was to produce cooperation, coordination, communication, and functional control of cost research across the three Services. The Air Force Cost Center developed the Cost Analysis Resource Reference System (CARRS) which was the repository for all Services. CARRS was a personal computer (PC) based, automated catalog of cost models and data bases of completed research. AMC reviewed early versions of CARRS and found many errors as well as outdated information. The headquarters tasked the AMC MSCs and separate activities to review entries for which they were the proponent and provide current data. AMC submitted this data to the Air Force Cost Center for inclusion in the next version of CARRS.

Revision of MIL-STD-881A. The DCS for Resource Management served on the DOD Revision Working Group for MIL-STD-881A, Work Breakdown Structure for Defense Materiel Items. This was a joint effort of OSD/PA&E, the three services, and the National Security Agency (NSA) to revise the document. The Revision Working Group met on September 27, 1989 after a break of 16 months. The Group reviewed the draft MIL-STD-881B, and copies were sent to AMC members of the subpanels for their review. The main policy section was rewritten; a new section covering the areas common to all appendices was added; and all seven appendices were revised. The draft document placed emphasis on software, integrated logistics support (ILS) training devices, automatic test equipment, and initial spares.

Total Risk Assessing Cost Estimate for Production (TRACE-P). On 13 January 1989, a revised Memorandum of Instruction (MOI) for AMC's implementation of TRACE-P was issued. The DCS also developed and provided an automated procedure to enhance and standardize TRACE-P analysis and report generation. This interactive computer program generated input for the U.S. Army Logistics Management College's PC version of the Venture Evaluation and Review Technique (VERT). On 5 June 1989, an updated MOI clarified TRACE-P inclusion in the baseline cost estimates (BCE) under cost element 2.021, "Recurring Production, Manufacturing."

Arroyo Center Cost Analysis Activity. The Arroyo Center Policy Committee (ACPC) met on 21 September 1989 and approved support to the Arroyo Center Cost Analysis Activity. The Arroyo Center Cost Analysis Activity made cost estimates in support of RAND projects: Multiple Launched Rocket Systems (MLRS) Deep Fires, MLRS Payloads, Competitive Strategy Study, and Future of Army Aviation Study.

Inflation Guidance and Methodology. The Office of Management and Budget developed inflation rate guidance which OSD refined for Defense application by the Services. HQDA prepared the Army's inflation indices and disseminated them to the Major Commands. The DCS for Resource Management served as the HQ AMC focal point for inflation, and provided the indices to the MSCs, Project Manager Offices, and other installations and activities. The AMC community used the indices in pricing BCEs, Selected Acquisition Reports, Program Objective Memoranda, budget submissions, and other cost estimates.

On 14 December 1988, the Director, U.S. Army Cost and Economic Analysis Center (CEAC) and members of his staff were briefed on the methodology AMC used in developing an additional set of Military Personnel, Army (MPA) inflation indices, and to obtain approval for their release. These indices included a weighted average of pay and non-pay considerations whereas the standard set of MPA indices were non-pay related. Upon conclusion of the briefing, the Director, CEAC, approved release of additional indices for use in life cycle cost estimating.

AMC issued guidance on application of inflation-deflators in weapon system cost estimates to assure that BCEs used a uniform methodology and adjustment factors for treatment of inflation, including historical data normalization from current dollars to a designated constant base year. Distribution of the latest OSD inflation factors was accomplished in January 1989, and the DCS developed a set of deflators, for each appropriation, based on OSD/DA information, for use throughout AMC and the OBCE system.

Guidance on Military Pay Rates. During January 1989, Composite Standard Rates for Costing Military Personnel Services, Army for FY89 and guidance on costing military personnel services in BCEs were issued. The DA Budget Office developed these rates in constant dollars. New rates were received in March 1989 reflecting revisions to the President's Budget.

Army Manpower Cost System (AMCOS). The Army no longer updated commonly used data sources which AMC required for preparing personnel portions of the BCE. In 1985, the Army initiated a contract to automate all Army manpower costs. The study, known as the Army Manpower Cost System, was completed for the Active Army Module. The command reviewed the outputs of the data from this module for use in BCEs and found that costs were generally acceptable for use in BCE preparation. Appropriate guidance was provided to AMC analysts for using AMCOS software.

Economic Analysis (EA). A large volume of EAs was reviewed to determine the adequacy of the methodologies and techniques employed, as well as the formatting from a technical point of view. The reviews encompassed many major programs such as Capital Investment, Information Management, Military Construction, Production Base Support, and Product Improvement. Policy and procedural guidance were provided to HQ AMC elements and subordinate activities when required.

Frequent Flyer Program (FFP) Economic Analysis. Policy and procedural guidance was provided to the DCS for Supply, Maintenance, and Transportation relative to their preparation of a HQDA directed EA on AMC FFP. The analysis included a discussion of the costs and benefits of the FFP currently operational at HQ AMC and five MSCs. The EA also included an extrapolation for the four MSCs which had no FFP experience data at the time of the analysis. Although the analysis showed the FFP was marginally cost effective, the EA study noted that the bulk of the savings resulted from extrapolated data and contained some inherent uncertainties.

Chargeback Cost and Benefit Analysis. During July 1988, the Under Secretary of The Army decided to implement a chargeback cost and benefit analysis. He approved an action plan during September 1988 to implement a chargeback system for Information Mission Area (IMA) services in compliance with OMB Circular A-130, Management of Federal Resources. In a memorandum to DISC4 (Director of Information Systems, Command, Control, Communications and Computers) and the Assistant Secretary of the Army (Financial Management (ASA(FM))) on 9 September 1988, he assigned the DISC4 HQDA staff proponentcy and also approved a chargeback beta test with appropriate resources.

DISC4 staffed a draft test plan which included Letterkenny Army Depot and Forts Lewis and Monroe as the test sites, and the U.S. Army Information Systems Command (ISC) as the implementing MACOM. A steering committee chaired by ASA(FM) met on 5 April 1989 and requested DISC4 to assess the costs and benefits to implement a chargeback program for individual mobilization augmentee (IMA) services. AMC, along with TRADOC AND FORSCOM, provides cost analysis support evaluation. ISC assumed the

lead role and the CEAC served in an oversight capacity. In a June 1989 meeting at Fort Huachuca, Arizona a draft study plan for assessing the costs and benefits associated with the chargeback beta test was prepared.³

AMC Cost Analysis Chiefs' Meeting. The Annual AMC Cost Analysis Chiefs Meeting was conducted at Fort Belvoir, Virginia, on 3-4 November 1988 to develop plans for the 1989 meeting. The meeting focused on the following topics: the Operational Baseline Cost Estimate, the Defense Management Review, AMC Cost Analysis Program Considerations, and Personnel Management Issues.

Resource Management Evaluation Surveys. Cost Analysis personnel participated in Resource Management Evaluation Surveys of CECOM and TACOM during FY89. The reviews focused on the cost analysis function and identified strengths as well as areas for improvement. Survey reports presented findings and recommendations for HQ AMC and the MSCs.

Resource Management Efficiency Review. The first phase of the functional review process for MSC Resource Management (RM) organizations was the Efficiency Review (ER). The AMC Management Engineering Activity (MEA) completed the AMC-wide ER of MSC RM organizations. The objectives of the ERs were to assess the effectiveness of the standard RM organization, and to identify and develop the most efficient organization and effective methods of operation. Extensive comments were provided to MEA on their strawman and drafts of the ER since the beginning of the study in April 1987. AMC's efforts ensured that the Performance Work Statement, the Performance Requirements Summary, the Potential Workload Factors, and the Potential Work Units accurately reflected the missions, functions, and workloads of the MSC cost analysis organizations.

In September 1989, AMC reviewed MEA's Final Efficiency Review Report (FERR). With a few minor corrections that MEA accepted, the FERR now accurately reflects MSC cost analysis functions. The Commanding General, AMC, approved the FERR, except for some proposed reorganizations, and deferred final action until the Defense Management Review is available. The MSCs received the FERR with implementing guidance for collecting labor and workload data for FY88, FY89, and FY90.

Resource Management Functional Model. A second phase of the functional review process for the MSC RM organizations was the functional model (FM). MEA completed an FM 1988 which AMC reviewed, and concluded that it was seriously deficient as a realistic and meaningful indicator of resource requirements. MEA will use the workload and man-hour data gathered through the implementation of the ER to refine the FM. If this refinement process did not produce a workable FM, MEA will initiate the third phase of the functional review process, a Manpower Staffing Standard System (MS-3) study, during the third quarter of FY90.

AMC Cost Analysis and the Defense Management Review. In response to a request from AMC's Deputy Commanding General for Research, Development, and Acquisition (DCGRDA), a concept paper outlining the role of the Cost Analysis community under the Defense Management Review (DMR) perspective was prepared. The paper addressed what was envisioned as the role of cost analysis at HQ AMC, MSCs, Program Executive Offices (PEOs), and their Program/Project/Product Manager Offices. The DCGRDA endorsed the concept paper for application of Cost Analysis under the DMR.

Cost Analysis Award. The Commanding General bestowed the annual AMC Cost Analysis Award for outstanding individual or group accomplishment to David W. Henningsen, AMCCOM, in the category of Cost Estimating/Cost Analysis for preparing the Selected Acquisition Report and the Baseline Cost Estimate

³Memorandum, CS AMC for Army Management Review (AMR) Task Force, 14 Aug 89, subj: Acquisition Management Resource Support System AMR, ASA(FM) Task #4A.

for the Sense and Destroy Armor Program; Laurie A. Merrill, AVSCOM, in the category Cost Estimating/Cost Analysis for developing the Life Cycle Cost Estimate for the Armed Reconnaissance Aircraft; Alfonso M. Severino, CECOM, in the category of Review and Validation for validating the Single Channel Ground and Airborne Radio System Baseline Cost Estimate; Howard P. Douglas, Jr. and William N. Washington, PM, TMDE, in the category of Research, Methodology, and Data for their participation in the Intermediate Forward Test Equipment (IFTE) Cost and Operational Effectiveness Analysis; Monroe K. Fisher, PM, SINCGARS, in the category of Cost Estimating/Cost Analysis for preparing the SINCGARS Baseline Cost Estimate; and Osman E. Gotham, TACOM, in the category of Economic Analysis for developing the economic analysis used to evaluate the repowering of the Medium Tactical Fleet.

Cost Analysis for Decision Making (CADM). The U.S. Army Logistics Management College (ALMC) presented four resident CADM classes during FY89, training 54 AMC employees. Disseminating the announcement of CADM more widely was intended to attract more students from DESCOM and PM offices. For FY90, there was a quota of 60 students, including all intern spaces. The command used the Army Training Requirements and Resource System (ATRRS), thereby eliminating the requirement for MSCs to prepare a DD Form 1556 for each student attending CADM.

Budget-to-Most Likely Cost-OSD Cost Analysis Improvement Group (CAIG) Reviews. As part of the Acquisition Improvement Program, the OSD CAIG annually reviewed a sample of estimates from each service to assure that budgets reflect the most likely cost of materiel systems. During FY89, estimates prepared for review by the CAIG included the following systems: Single Channel Ground and Airborne Radio System (SINCGARS), M1/M1A1 Abrams tank, Advanced Field Artillery Tactical Data System (AFATDS), and Sense and Destroy Armor (SADARM).

Army System Acquisition Review Council (ASARC) and Defense System Acquisition Review Council (DSARC) Reviews. AMC examined estimates developed for support of major system decision reviews by the ASARC and DSARC on the following systems: Army Tactical Missile System (ATACMS), LONGBOW, AVENGER, Follow On to Lance (FOTL), Advanced Antitank Weapon System (Medium) AAWS(M), and AFATDS.

Baseline Cost Estimates (BCEs) and BCE Reassessments. Cost Analysis Offices at MSCs and HQ AMC reviewed and coordinated BCEs prepared by the project managers. BCEs formed the basis for the audit trail/track throughout the life cycle of a weapon system. Reassessments, made at major decision points, tracked backwards to the initial BCE. BCEs or reassessments were conducted for the following systems:

TABLE II-1
BCEs and BCE Reassessments

COMPLETED		IN-PROCESS		
BLACK HAWK	NLOS	PATRIOT	AAWS-M	SADARM
STINGER	MLRS	AVENGER	APACHE	FAAD C2I
HELLFIRE	FOTL	CH-47D	JSTARS	FMTV
LOS-F-H	LHX	ATACMS	ADDS	BFVS
MLRS/TGW		M1/M1A1	HFM	HSE
TOW II		MARK XV	HIP	AEI
AHIP		AFATDS		

Source: DCS for Resource Management Historical Submission for FY89.

Cost and Operational Effectiveness Analyses (COEAs), Abbreviated Analyses and Other Major Studies. COEAs required coordination with CEAC, TRADOC, MSCs, and PMs. COEAs and other analyses/major studies for the following were accomplished:

TABLE II-2
COEAs/Abbreviated Analyses and Other Major Studies

COMPLETED		IN-PROCESS			
AAWS(M)	HD-MET	FIREFINDER	FAADS	HIP	HFM
IAAWS	ALBF	PATRIOT P3I	MAIS	PED	IEW
M1A1	FIFV	Longbow	LOSAT	LADDS	PLS
IRV	VEMASID	ICBDFA	FOTL	CBHS	

Source: DCS for Resource Management Historical Submission for FY89.

Mission Area Master Plans. The command reviewed estimates in support of mission area master plans for the following mission areas: Aviation, Air Defense, and Position Navigation.

PM Major Reports. Project Managers prepared various reports, such as Selected Acquisition Reports (SARs), Unit Cost Reports (UCRs), Supplemental Contractor Cost Reports (SCCRs) and Defense Acquisition Executive Summary Reports (DAES), which give the status of major defense systems, prepared for management within DOD to submit to Congress and other government agencies. All programs designated as major defense systems by the Secretary of Defense require these reports which summarize current estimates of technical schedules, quantity, and cost information. Major systems reported on during FY89 included:

TABLE II-3
PM Major Reports

Longbow	Avenger	LOS-F-H	MSE
ATACMS	Patriot	FMTV	JTIDS
Stinger	Hellfire	BFVS	AHIP
Black Hawk	MLRS/TGW	NLOS	PLS
FAAD C2I	CH-47D	ASAS	AAH
Copperhead	M1/M1A1	TOW II	MLRS
SinCGARS	AAWS(M)	FOTL	ADDS

Source: DCS for Resource Management Historical Submission, FY89.

Budget Analysis

FY89 Budget Execution. AMC closed out fiscal year 1989 with direct obligations totalling \$5.289 billion or 99.99 percent of available funds. Operations and Maintenance, Army (OMA) reimbursable customer funding totalled \$472 million or 5 percent above prior year customer funding of \$449 million. This noteworthy accomplishment was made in spite of the late receipt of funds between August and

September. This fiscal year was another year of declining resources requiring congressional reprogramming actions that were not approved until late in the fiscal year. This included \$45 million in P7S for infrastructure requirements, \$123 million for Depot Maintenance, \$32 million for Total Package Fielding in P2 and \$6 million for environmental projects in P7S.

FY89 Army Industrial Fund (AIF) Cash Decrease. The overall AMC AIF cash position decreased an additional \$20.1 million from 30 September 1988 to 30 September 1989. However, this is very deceptive. The U.S. Army Depot System Command (DESCOM) was responsible for a \$50 million loss in cash which could have been substantially worse if not for the use of cash advances, pass-throughs, and repricing, or renegotiation of select FY88/FY89 orders. HQDA was concerned by the possibility of an anti-deficiency violation in the AIF.

Throughout the year various issues such as inventory management, workload factors, parts problems, and employment levels reflected a need for greater management emphasis to turn around industrial fund losses and promote greater efficiency to the operation as a whole. A special team was formed to effect short-term solutions to overall solvency and long-term restructuring in some critical areas. The command successfully maintained the solvency of the AIF in the short-term by employing such methods as cash advances and repricing. For long-term solutions, areas were identified for further investigation to improve management and efficiency of operations.

FY89-91 Resource Management Update (RMU). The headquarters submitted the FY89-91 RMU to HQDA on 14 July 1989. HQDA directed that the RMU be used to "fine tune" the FY91 President's Budget, and as an update to MACOM's FY89/90/91 command operating budget (COB) submissions. AMC submissions were based on Army and AMC priorities and balanced within the constrained funding guidance received. This included delaying fielding of new systems, unless the command had the capability of funding the sustainment of systems without abandoning support for systems already fielded.

Program Budget and Funding Policy. The DCS represented AMC functional interests in dealings with HQDA staff (SARDA, ASA[FM]) to develop a Planning, Programming, Budgeting and Execution System (PPBES) for PEO guidance in the management of OMA appropriations. The specific issues involved accounts which would be controlled by the MACOMs versus the PEO/PM, and how funds distribution. A tentative agreement was reached regarding management responsibility for most accounts, and HQDA decided to direct-fund PEO/PMs through separate operating agencies, beginning 1 January 1990. The Finance and Accounting Division was the lead office regarding this latter decision, and all positions were approved by AMC Command Group (primarily Deputy Commanding General for Research, Development and Acquisition [DCGRDA] and occasionally the Commanding General).⁴

Finance and Accounting

Foreign Military Sales (FMS) Case Cash Reconciliation. The special reconciliation teams were disbanded in late March 1989. The reconciliation function was transferred to MSC Customer Order Control Points (COCs). In April 1989, the Army transferred the Program Budget Accounting System (PBAS) FMS disbursements to the Security Assistance Accounting Center (SAAC) Defense Integrated Financial System (DIFS), effective 31 January 1989. This created a new variance, the difference between country-level disbursements and case level disbursements. The COCs were working to reduce this variance. Internal controls were in place to identify discrepancies as they occurred. The U.S. Army Security Affairs Command (USASAC) now has the responsibility to monitor FMS variances.

⁴Memorandum, LTG Jerry M. Bunyard for Mr. Keith Charles, 14 Sep 88, subj: PEO Resource Support System.

AMC Wholesale Army Stock Fund (ASF) Cash. AMC's operating cash balance improved from a negative \$98 million to a positive \$36 million although DA withdrew \$116 million for reprogramming to OMA funds. The following actions were taken to improve the operating cash position: reduced FY89 obligation authority; extended materiel delivery dates; reduced back orders early; delayed contract awards; and reduced annualized buys to design only stable items.

AMC Accounting Course. The sixth session of the AMC Accounting course was completed. The course was designed and developed to train accountant interns to meet the command's unique operating requirements, and to provide concepts and rationale for accounting support to various management and logistical processes served. Since there was an insufficient number of accountant interns this year, nominations were extended to non-intern accountants and accounting technicians. There are no finance courses given by Army schools that present the unique accounting system encountered in the AMC complex. Two courses were projected for the next year.

Military Interdepartmental Purchase Request (MIPR) Workgroup. The short-term recommendations made by the workgroup included increasing the use of advance MIPRs, treating all MIPRs equally, providing a MIPR point of contact, developing an interservice quality checklist, and requiring that notification of contract awards occur within 5 days. In January 1989, the DCS for Resource Management signed a Memorandum of Agreement (MOA) between the services agreeing to the recommendations developed by MIPR workgroup. The AMC Chief of Staff also signed a memorandum that implemented the MOA in March 1989.

FY87/FY88 OMA Unliquidated Obligations Scrub. AMC identified \$24.8 million of FY87 funds for return to DA to finance 1989 foreign currency requirements. The shortage in the Foreign Currency Fluctuation Account was caused by the difference between the budget and execution rates. AMC also identified \$44.8 million of FY88 funds that were issued to DESCOM to cover AIF costs in depot supply operations. Use of expired year OMA funds minimized the requirement to direct current year funds for these purposes.

Standard General Ledger. Phase I of the General Ledger Trial Balance Reporting was completed by the command. This phase required recognition of the Government's standard chart of accounts and the reporting of installation activity and values in terms of that standard chart of accounts. On 30 September 1989, all of AMC's appropriated and revolving funds were reflected in the trial balance reports submitted to HQDA. AMC also initiated actions necessary to ensure and demonstrate full General Ledger control of all financial resources.

Real Time Access to AMC Finance and Accounting Reporting Data Bases. The Systems Integration Management Activity (SIMA) developed a system to provide the headquarters with direct access to financial information, as reported by finance and accounting (F&A) offices. This management improvement ensured the capability of having financial data readily available for utilization.

AMC Accounts Office Initiatives. The AMC accounts office began implementation of several initiatives. They involved: capability for real-time reject error correction by reporting station; use of file transfer procedures for reports to and from reporting stations; increased report analysis; and planning for modification or upgrade to the Army Procurement Appropriation Reporting System.

FY89 Year End Reporting. The Servicing Accounts Office successfully consolidated the FY89 year end certified reports. This effort facilitated the completion of departmental verification ahead of schedule.

Financial Goals and Performance. The FY89 goals established by AMC and the actual September performance are listed below.

TABLE II-4
Financial Goals and Performance

Goal	FY89 Goal	Actual Goal
FMIP Performance	92.0	85.7
Delinquent Public Debt	1,332,295	580,473
Uncleared TBO over 180 days	870	367
Uncleared If over 210 days	828	112
Prior Year Travel Advances By 31 Mar 89	2,125,224	472,551
"M" Year Travel Advances By 30 Jun 89	0	0
"M" Year Unliquidated Obligations	1,718,963,596	1,715,108,975
Dit Chargeback Transaction	134	200
Civil Service 302 vs 2812	37	22

Source: Resource Management Historical Submission, FY89

Program Execution. The AMC FY89 obligation for procurement appropriations (PA), RDTE, Conventional Ammunition Working Capital Fund (CAWCF), OMA, and ASF wholesale was \$31.1 billion against an obligation plan of \$31.8 billion, and total programs available of \$35.6 billion. FY89 obligations represent 97.8 percent of planned obligations and 87.4 percent of available programs. Following are some of the significant performances of FY89:

- * AMC obligated \$16.4 billion of the \$17.5 billion AMC PA plan submitted to DA for procurement appropriations. The contributing factors for not meeting the DA goal were the slippages of Army Data Distribution System, STINGER, Special Operations Forces, Line of Sight Forward-Heavy and Advance Attack Helicopter contract awards.

- * AMC obligated 83 percent of program year (PY) 1989 Other Procurement Army (OPA) program against an Office of the Secretary of Defense (OSD) goal of 80.0 percent.

- * AMC had \$41 million of PY87 unobligated PA funds (0.30 percent of program). In this area, this was the best year in the history of the command.

- * The unobligated carryover program into FY89 was \$3.7B in PA, \$236M in RDTE, and \$475M in CAWCF.

- * AMC successfully achieved DA established levels during the last week and last day of September for contractual awards requiring congressional notification.

Force Development

Civilian Employment Level (CEL). At the end of FY89, AMC's on-board civilian strength was 106,247 which was 1,200 above the established target of 105,047. This over-strength was due to the policy of allowing local commanders to manage manpower resources, in the year of execution, according to funds available. The excess personnel on board were concentrated in AIF and RDTE funded organizations where reimbursable dollars paid most of the bill. This strength posture represented an FY89 growth of 2,746 in civilian strength, following a decrease of over 16,000 people in the past three years.

Civilian Pay Ceiling (CPC). The CPC was developed, analyzed, monitored and approved by the CPC Committee, which consisted of representation from the Budget, Research and Development, Finance and Accounting, Allocations and Requirements functional areas. Managing the Civilian Work Force to Budget (MCB) test sites (TROSCOM, TECOM, AMCCOM, DESCOM & USASAC) provided the committee with their requests for an FY90 CPC. The MCB documents provided data on anticipated workload/workyears, reimbursable and direct funds (actual/requested), and in some cases, they provided justification for additional workyears. Known adjustments were made to the base and an FY90 preliminary CPC was issued. The actual CPC should be issued during the second quarter of FY90 after resolution of some major funding issues.

Base Realignment and Closures (BRAC). Congress accepted the recommendations of the Secretary of Defense's Commission on BRAC. The BRAC Commission's report projected a manpower savings by FY95 of 22 military and 1,082 civilian spaces through closure or realignment of the following AMC installations:

Alabama Army Ammunition Plant (AAAP)

Fort Wingate Army Depot (FWAD)

Jefferson Proving Ground (JPG)

Lexington portion of Lexington Bluegrass Army Depot (LBAD)

Material Technology Laboratory (MTL)

Pueblo Army Depot (PUAD)

Umatilla Army Depot (UMAD)

Navajo Army Depot Activity

The BRAC Commission determined that some AMC functions and associated manpower should be transferred from closing bases or realigned installations to new locations. The most significant AMC manpower transfers identified by the Commission were:

- * The Materiel Readiness Support Activity (MRSA) transfer from Lexington to Letterkenny AD.
- * The US Army Central TMDE Activity move to Redstone Arsenal.
- * The communications electronics functions at Lexington move to Tobyhanna AD.
- * The Jefferson Proving Ground (JPG) activities move to Yuma PG.

* The Umatilla AD's conventional ammunition mission transfer to Hawthorne AAP.

* The Pueblo AD's supply mission transfer to Tooele AD and the ammunition mission transfer to Red River AD.

The commission did not specifically mention the Logistics Control Activity (LCA), which was scheduled to transfer to Letterkenny AD because of the announced closing of the Presidio of San Francisco (Sixth Army).

In September 1989, MACOMs provided data for the HQDA implementation plan (IP). After reviewing the MACOM IPs, HQDA determined that the Vice Chief of Staff, Army (VCSA) and the Select Committee (SELCOM) should review the matter and determine a new distribution of BRAC space savings. As a result of the SELCOM review, HQDA determined that AMC would lose 9 military spaces and 1,230 civilian spaces for BRAC by FY95, which included 46 AMC tenant spaces to be saved in connection with the closure of Fort Dix (U. S. Training and Doctrine Command [TRADOC]), and the realignment of Fort Devens (ISC). By the end of FY89, AMC had not agreed to lose any spaces for Fort Dix or Fort Devens. Further, AMC declined to offer any space savings for Fort Wingate, since AMC gave up the spaces at Fort Wingate beginning in FY91 for PBD 731. AMC had planned to close Fort Wingate before the BRAC Commission began their study.

The Requirements Section was tasked to conduct a survey of Umatilla and Pueblo Army Depot activities subsequent to realignment actions. The survey encompassed an evaluation of existing workload and an estimate of the resources based on regulatory guidance and projected FY95 changes. Staffing recommended reflected "caretaker" responsibilities effective FY95. Staffing to support the DEMIL operations (FY95-FY97) was not developed because data was not available. In FY89, Force Development Division assisted the DCS for Management and Productivity's Organizational Management Division in translating BRAC manpower decisions into budget level data that was forwarded to HQDA.

Defense Management Review (DMR). On 27 June 1989, AMC established a DMR Task Force which served until the end of the fiscal year. The task force developed recommendations for implementing the President's directed DMR. Substantial improvements were realized in the acquisition and logistics processes and defense management overall. The task force accepted numerous recommendations for submission to OSD. Both DA and AMC are studying other recommendations for future savings by the Army. The task force identified over 8,000 spaces for savings to HQDA. Force Development assisted in the DMR by taking aggregate level decisions and suballocating manpower to AMC commands and units for inclusion in the FY91 President's Budget.

Program Executive Officer (PEO) Resourcing. The Under Secretary of Army announced several organizational changes resulting from the Program Manager (PM) Scrub Task Force. The Under Secretary established a manpower baseline for each PEO/PM who submitted an implementation plan with detailed manpower audit trails, a Total Army Authorization Documentation System (TAADS) and schedules 8. Other organizational changes included redesignating PEO Close Combat Vehicles as PEO Heavy Force Modernization (HFM); disestablishing PEO Chemical-Nuclear and PEO Troop Support; and planning for establishment of a new organization, Army Management Support Activity (AMSA), effective 1 January 90. All PEO/PM resources will be transferred to the command and control of the Secretary of the Army for Research, Development, and Acquisition (SARDA) organizations with AMSA providing support functions.⁵

⁵Memorandum, LTG Bunyard for the Acting ASA(RDA), 6 Sep 89, subj: Program Executive Officer (PEO) Resource Support System Changes; Memorandum, LTG Bunyard for the Acting Assistant Secretary of the Army (RD&A), 12 Sep 89, subj: Army Acquisition Executive Officer (AAE) Decision Memorandum, PEO Support System Changes; COL Robert D. Mortig, Director, Acquisition and Industrial Base Policy,

Officer Distribution Plan (ODP) Elimination. The Army needed to eliminate 3,600 field grade officer spaces that could not be manned, based on projected average operating strength. HQDA's solution was to reduce FY91 officer structure in the TAADS to the FY89 ODP level. The VCSA approved the proposal but fenced Corps HQ, Division HQ and MTOE units from the cut. The Deputy Chief of Staff for Operations and Plans (DCSOPS) requested the MACOMs to conduct a TAADS excursion to reduce table of distributions and Allocations (TDA) unit officer authorizations to ODP level. AMC complied and the net reduction was 330 officer authorizations in FY91. This included a reduction of 307 field grade officers, approximately 21 percent of AMC's field grade officers.

In August 1989 the Commanding General, AMC sent a memorandum to HQDA, outlining the command's concerns: retention of current authorized level for the Materiel Acquisition Management (MAM) Program; and support of both board select and non-board select positions, research and development positions, and missions without resources. The DA Audit Task Force was scheduled to meet with MACOM representatives in October 1989 to address concerns and issues that resulted from the TDA excursion. AMC was expected to present issues relative to the restoration of 151 authorizations (131 field grades). The command was assured that the DA Audit Task Force would submit any changes to the General Officer Steering Committee (GOSC) for evaluation. The DA revision would include 166 officer authorizations.

Manpower Reductions and Functional Transfers. AMC received many HQDA directed reductions in civilian and military manpower. The reductions required:

- * HQDA transfer of U.S. Army Toxic and Hazardous Materials Agency (7 military and 72 civilians) to the U.S. Army Corps of Engineers and the U.S. Army Space Program Office (23 military and 21 civilians) to the Army Staff.

- * AMC receive a cut of 19 Officers for FY89 and 24 Officers in FY90 as part of Army's commissioned officer reductions directed by Congress.

- * Program Budget Decision 661, a commercial Activities reduction, reduced AMC by 733 civilians in FY89 and 278 civilians in FY90 and out years.

- * The Vander Schaff reduction was a European decrement of 3 officers and 9 civilians in FY90 and 4 officers and 16 civilians in FY91 and out.

- * The spaces for PEO Command and Control Systems and PEO Communications (77 military and 347 civilians) were transferred to separate Resource Commands effective FY90.

Foreign Military Sales(FMS)/Security Assistance. As a result of the Resource Management Update (RMU) submission, AMC reprogrammed all full-time permanent FMS spaces in the Management Decision Package (MDEP) code GFMS to Army Management Structure (AMS) code 002002 for FY90 and out years. Previously, AMS code 002002 had applied only to direct case funded FMS manpower. For FMS, the definition of a full-time space was a space in which the incumbent spent 90 percent or more of the time working on FMS functions.

As a result of revisions to DOD Acquisition Circular 88-5, U.S. Army Security Affairs Command (USASAC), which is AMC's focal point for FMS and other security assistance programs (e.g., Military

HQDA, for Distribution, 8 Sep 89, subj: Army Acquisition Executive (AAE) Decision Memorandum, PEO Resource Support System Changes; Ltr, GEN Wagner to Secretary of the Army, 8 Sep 89.

Assistance Program, Military Assistance Advisory Groups), was designated as the Army's focal point for collection of non-recurring costs (NRC) owed to the U.S. Government by contractors as a result of direct commercial sales of Army materiel and technology. In direct commercial sales, AMC provides materiel to companies which supply foreign customers. Direct sales were approved by the State Department. USASAC's new mission will include managing the Army's NRC data base.

Total Army Analysis (TAA) Final Phases to VCSA and CSA. Twenty-four manpower issues were submitted in TAA, but only five were forwarded for consideration by the VCSA and CSA. Of the remaining five, AMC received resourcing for two issues. The South West Asia Distribution System Operational Project Stocks (SWAPDOP/WATER) received a recommendation and approval for 75 spaces; BZ Demilization received a recommendation and approval for 52 spaces. Although HQDA resourced these requirements, AMC was also levied an undistributed offset in the October 1989 PBG.

FY89-FY97 Resource Management Update (RMU). AMC submitted the FY89-FY97 budget based on HQDA's pre-established reprogramming rules. A tasker was provided to the MSCs and separate reporting activities (SRAs) on 22 March 1989. Several actions that transpired at HQDA included an entire revamping of the Management Decision Packages. HQDA provided the flexibility for MACOMs to support "buy back" spaces originally decremented in the January 1989 PBG if funding was available. AMC defended successfully the "buy back" of 278 spaces which was reflected in the October 1989 DA PBG.

Non-Appropriated Fund/Appropriated Funds Conversion. Congress mandated that all Morale, Welfare, and Recreation (MWR) Non-Appropriated Fund (NAF) employees paid out of appropriated funds be converted to appropriated fund employees not later than 1 October 1990. For HQ AMC, this transaction will result in the conversion of 572 spaces. These conversions were received in the October 1989 DA Program Budget Guidance.

Reinstitution of HQ AMC Manpower Survey Program

The HQ AMC Requirements Section began a limited manpower survey program in FY89. The headquarters conducted surveys of Headquarters, Depot System Command, the Installation and Services Activity and the Industrial Engineering Activity. The surveys covered approximately 1,200 military and civilian positions. Survey team personnel also participated in surveys conducted by the U.S. Army Force Integration Support Agency (USAFISA), formerly the U.S. Army Manpower Requirements and Documentation Activity (USAMARDA). These surveys were of the U.S. Army Finance and Accounting Center and USASAC's Foreign Military Sales function. The Requirements Section began detailed planning for the planned FY90 survey of Headquarters, U.S. Army Communications-Electronics Command (CECOM).

Integrated Manpower Requirements Determination Policy. The Requirements Section developed and published a policy which combined the principal manpower requirements determination techniques into a single, unified process. Under this policy, scheduled manpower surveys will incorporate the results of other approved and implemented techniques (MS-3 standards and models), and will use available data generated during development of those standards and models not yet approved or implemented. A completed survey will provide an organization's total manpower requirement at a fixed point in time.

Modified Manpower Survey Process. The U.S. Army Management Engineering College (AMEC) introduced to HQ AMC force development officials a modification of the traditional manpower survey process. The DCS for Resource Management approved test implementation of the modified process for the survey of HQ TECOM scheduled for FY90. Several personnel in the Requirements Section and the Staffing Standards Applications Section began preliminary identification of measurable work units for frequency collection prior to on-site work measurement in FY90.

Office Automation in HQ AMC. At the request of the Chief of Staff, the Requirements Section conducted a study of office automation manpower utilization in the headquarters. The study concluded that personnel in headquarters staff elements perform about 45 manyears of office automation work, of which 10 to 20 manyears properly was the responsibility of the Director of Information Management (DOIM). The study recommended that the Chief of Staff appoint a provisional Information Management Support Council (IMSC) to identify and place 10 staff positions under the DOIM's operational control on a 6-month test basis. The study also recommended that the Commandant, Headquarters, Installation Support Activity (HISA) request ISC to review the DOIM's organizational structure and staffing in coordination with the IMSC. The final report will be forwarded to the Chief of Staff in FY90.

Manpower Staffing Standards System (MS-3). The MS-3 program was an Army-wide effort designed to quantify and document the relationship between an assigned mission, the workload associated with that mission, and the manpower required to perform the workload. It employed work measurement, industrial engineering, and statistical techniques to develop staffing equations that determined resource requirements for any given level or workload.

The AMC Management Engineering Activity (AMCMEA), under the direction of the DCS for Resource Management, had the responsibility for conducting standards development studies within AMC. The studies may be independent efforts covering AMC unique missions, or any part of an Army common effort to address functions performed by two or more MACOMs. Once AMCMEA completes their study, and a standard is approved, the Staffing Standards Application Division assumes responsibility for the application and use of the standards as tools to determine and justify manpower requirements.

Under the direction of the DCS for Resource Management, AMCMEA applied standards to a variety of functions with a total manpower requirement of approximately 12,760 manyears. Concurrent with efforts to develop traditional MS-3 standards, which are very labor intensive and may take two to three years to finalize, AMCMEA expanded its efforts towards the development of "Functional Models" (FMs). The models were abbreviated standards created by employing historical workload and manpower data over a given period and developing a staffing equation at the summary, or "macro", level (i.e., for total directorate or major mission elements).

The first IMES was published and distributed to all MSC's and field operatives. This schedule includes all the methods involved in management engineering operations (manpower surveys, efficiency reviews, functional models, conventional staffing standards, and subject matter assessments). The purpose of the schedule was fourfold: to consolidate the different methods into a unified approach; to ensure all activities/organizations were covered; to eliminate any duplication of effort; and to keep the field aware of on-going and future studies. This process involves presenting each method's status by functions.

Army Manpower Standards Application System (AMSAS). The AMSAS program was fielded to the MSCs, and preliminary AMSAS user training for all MS-3 standards application personnel was completed in September 1989. Class quotas were met and training was successful as evidenced by the very positive responses from those in attendance. The DCS for Resource Management was confident that AMSAS will streamline and expedite the processing of standards. The first FM utilizing the AMSAS program was New Equipment Training.

Budget Program Resource Review (BPRR). The consolidation of management and analysis of performance data required in PPBES was accomplished during the submission of the FY89 BPRR. The Staffing Standards Application Division assumed responsibility for the completion of Schedule 5 data during the last budget cycle. Schedule 5 data was that workload and performance data specifically requested by DA, and used to evaluate AMC mission accomplishment and resource utilization and requirements. With responsibility centralized in the BPRR, the DCS for Resources Management was able to improve the quality and consistency of reporting over previous years. Concurrently, efforts were continued to institutionalize the

use of standardized methodologies to forecast and defend manpower requirements. The increased use of approved staffing standards, and refined and revised reporting requirements improved the accuracy and credibility of the data submissions.

Manage the Civilian Work Force to Budget (MCB). The MCB was an initiative of the DA Civilian Personnel Modernization Project. The fundamental purpose of MCB was to give line supervisors fiscal accountability for civilian personnel costs. Participating supervisors were provided maximum flexibility to classify positions and to manage their organization and civilian personnel costs (including base salary, benefits, overtime, awards and premium pay) within a Civilian Pay Ceiling (CPC). The CPC was developed, monitored and approved by the CPC Committee.

Conventional controls such as employment level ceilings, organization guides, average and high grade controls, and supervisory ratios were rescinded. Staffing Standards Applications Section provided manpower representation on the MCB HQ AMC Working Group--the MACOM proponent charged with spearheading the MCB initiative throughout AMC. Other functional members of the AMC MCB Working Group were: Budget, Management and Productivity, Internal Review, Manpower Allocations and Civilian Personnel (Co-Proponent). Accomplishments during FY89 were:

- * Participation in the on-site Phase 2a Inspections conducted at test installations Red River Army Depot and Natick Research and Development Center.
- * Providing technical assistance and administrative support during the 3-day "Train the Trainers" Seminar hosted by HQ AMC Working Group.
- * Conducting formal briefings with USASAC key personnel.
- * Attending TRADOC MCB Course and assisting DCSPER representatives in drafting preliminary procedures for "Satellite" training via ALMC.
- * Participation in the drafting and distribution of the supplemental HQ AMC LOI.

Integrated Manpower Requirements Determination Policy. A policy was developed and published which brought together principal manpower requirements determination techniques into a single, unified process. Under this policy, scheduled manpower surveys will incorporate the results of other approved and implemented techniques (MS-3 standards and models), and will use available data generated during development of those standards and models not yet approved or implemented. A completed survey will therefore provide an organization's total manpower requirement at a fixed point in time.

Modified Manpower Survey Process. The U.S. Army Management Engineering College (AMEC) introduced to HQ AMC Force Development officials a modification of the traditional manpower survey process. The DCS for Resource Management approved test implementation of the modified process for a survey of Headquarters, U.S. Army Test and Evaluation Command scheduled in FY90. Several personnel in the Requirements Section and the Staffing Standards Applications Section began preliminary identification of measurable work units for frequency collection prior to site work measurement in FY90.

Reorganization and Realignment

Five USAMC units during the fiscal year were discontinued by Permanent Orders:

- * Permanent Order 97-1, 27 October 1988, discontinued the U.S. Army Program Executive Officer (PEO), Ammunition (XLW4Y7AA), effective 1 May 1989, as an action within the overall realignment of PEO structure.

* Permanent Order 106-1, 21 November 1988, discontinued the Program Manager, Test, Management, and Diagnostic Equipment (X8W4K0AA), effective 1 May 1989, under a Concept Plan for restructuring to provide matrix support.

* Permanent Order 114-1, 12 December 1988, discontinued the U.S. Army Electronic Proving Ground Digital Communications System Test Company (XMW4CQAA), effective 30 April 1989, under a Concept Plan to reorganize the Electronic Proving Ground.

* Permanent Order 4-1, 18 January 1989, discontinued the Program Manager, Chemical Munitions (Provisional) (XXWDM0DL) effective, 30 September 1988. Action to organize unit did not materialize.

* Permanent Order 61-15, 7 July 1989, discontinued the U.S. Army Tropic Test Center, effective 1 October 1989, under a Concept Plan to realign missions and functions within USAMC.

Five other units were organized under the following permanent orders:

* Permanent Order 115-4, 12 December 1988, organized U.S. Army Logistic Assistance Program Activity (LAPA) (XXW4ZPAA), effective 1 May 1989, under a Concept Plan to consolidate logistic program functions.

* Permanent Order 4-1, 18 January 1989, organized Program Manager, Chemical Demilitarization (PMCD) (XXWM0DL), effective 1 October 1988, in support of a study to strengthen controls in the area of Chemical Demilitarization.

* Permanent Order 44-2, 26 May 1989, organized Program Executive Office Command and Control Systems (X8W44GAA), effective 1 October 1989, to establish an organizational structure aligned to management controls.

* Permanent Order 81-1, 5 September 1989, organized the U.S. Army Research, Development and Standardization Group--Japan (USARDSG-JA) (XXW449AA), effective 1 October 1990, to initiate an Army research, development and standardization program to coordinate matters of common interest in Japan.

Three USAMC units were organized (provisionally):

* Permanent Order 33-1, 27 April 1989, organized (provisional) U.S. Army Materiel Command Systems Integration and Management Activity (XXW4UKAA) effective, 1 May 1989, to centralize design and integration of automation systems for Army Logistics.

* Permanent Order 98-2, 27 October 1989, organized (provisional) U.S. Army PMCD (XXW2DFAA), effective 1 October 1988, to initiate personnel actions and provide support to national efforts to obtain a verifiable chemical disarmament treaty.

* Permanent Order 98-1, 27 October 1989, organized (provisional) U.S. Army Chemical Agent Munitions Disposal System (CAMDS) Activity (XXW26FAA) to initiate personnel actions and to dispose of the U.S. stockpile of lethal and incapacitating chemical warfare agents and munitions.

Three USAMC Units Were Redesignated by Permanent Orders:

* Permanent Order 89-1, 6 October 1988, redesignated the U.S. Army Satellite Communications Agency (SATCOMA) (X8W039AA), effective 1 October 1988, to reflect the realignment of the organization

to meet U.S. National, Department of Defense and Department of the Army policies and to enhance the Commitment and Capabilities in space.

* Permanent Order 117-1, 20 December 1988, redesignated the U.S. Army Communications Security Logistics Activity (CSLA) (X8W3TAAA), effective 3 January 1989, to better define the Command and Control relationships of this activity.

* Permanent Order 21-5, 22 March 1989, redesignated Program Manager for Rocky Mountain Arsenal Contamination Cleanup (XXW4UZAA), effective 1 April 1989, to coincide with revised Program Manager's Charter for Rocky Mountain.

One USAMC unit was reassigned by a Permanent Order:

* Permanent Order 99-1, 3 November 1988, reassigned Program Manager for Rocky Mountain Arsenal Contamination Cleanup (XXW4UZAA), effective 1 October 1988, transfer of USATHAMA to Corp of Engineers necessitated reassignment of PM Rocky Mountain Arsenal Contamination Cleanup to U.S. AMC.

Two USAMC units were reorganized:

* Permanent Order 26-1, 4 April 1989, reorganized the U.S. Army Electronic Proving Ground (XMW04YAA), effective 1 May 1989, to change status of unit from a provisionally organized unit to an organized unit.

* Permanent Order 26-2, 4 April 1989, reorganized the U.S. Army Depot Mainz (XWW109AA) effective, 10 January 1989, change in status of Wackernheim Support Detachment due to redesignation.

Standard Systems

AMC Accounting System. The AMC Accounting System (AMAS) will become the installation general operating level, special operating level, standard accounting and financial reporting system for all funds entrusted to AMC. The AMAS will consist of four modules: Investment, Revolving, Operating, and Entitlements. Each module will have one or more subsystems related to funds, missions, or functions of AMC. In FY89, AMC proceeded with the implementation plans for AMAS modules.

The Automated Financial Entitlements System (AFES) was in the final stages of completion. The contractor had completed programming all three modules of AFES, that is, Commercial Accounts, Travel, and Disbursing. The system successfully completed a prototype at MICOM and deployment began in January 1990. All of the AFES integrated subsystems will eventually interface with all the other components of AMAS as well as the DA standard systems.

The standard AMC Retail Army Stock Fund Financial Inventory Accounting and Reporting System (RASFIARS), together with the "family" of standard division level stock fund systems, was deployed at more than 50 percent of the scheduled sites. Four additional sites, Mainz Army Depot (MZAD), MICOM, AVSCOM and CECOM were brought on line during FY89. The remaining sites for implementation--TECOM, Natick Research, Development, and Engineering Center (NRDEC), and Vint Hill Station (VHS)--may be severely impacted because of the anticipated budget reductions in FY90.

In the Operating module, the Standard Army Procurement Appropriation System completed implementation of the DA Standard General Ledger. While AMC's Standard Operation Maintenance Army, Research and Development System (SOMARDS) was implemented at AVSCOM, AMCCOM, CECOM, MICOM, and TACOM in October 1989, the implementation reduced the number of AMC unique systems by four which were not in compliance with GAO principles and standards. The first, second, and third

level reviews required by the Federal Manager's Financial Integrity Act were completed. It was concluded that SOMARDS will meet GAO standards and that the system will perform satisfactory accounting and reporting at the allotment level. The OSD and DA Comptroller staffs performed reviews of SOMARDS for compliance with with DOD 7220.9M and found that SOMARDS met the requirements as set forth in the regulation. The SOMARDS/AMCISS/RASFIARS interface was tested and included in SOMARDS. The Budget Resource Information Management System (BRIMS) interface was being tested with standard reports that were submitted through SIMA and approved by HQ AMC. Technical training for the installation of SOMARDS at DESCOM, LABCOM, White Sands Missile Range, and Aberdeen Proving Ground was conducted on 30 September 1989 at SIMA. Familiarization and testing is expected to begin at these sites during 1st Quarter FY90.

AMC Automated Manpower Management Information System. Designed to automate manpower management/force development functions within AMC, the AMC Automated Manpower Management Information System (AAMIS) will provide for the gathering, definition, automation, and storage of common manpower management/force development information required by HQ AMC, MSCs/SRAs, and installation/field elements. This system will be capable of evolving over a period of years to support additional or changed functions and users. Features to be incorporated are: user friendliness; consistent and similar appearance and operation from module to module; and validated input (i.e., date entry will be edited and error messages presented to the user). Computational accuracy will be absolute.

All life cycle documentation for AAMIS was completed, including three economic analyses for each life cycle phase and a project management plan. A Software Qualification Test (SWQT) for the Allocation Module was conducted at the System Integration and Management Activity, Chambersburg, Pennsylvania. Prior to the SWQT, the Allocation Team met and prepared the SWQT and, upon completion of the test, a Test and Analysis Report was prepared. The Allocation Module was scheduled to deploy in January 1990.

Resource Management Operations

The mission of the Resource Management Operations Office (RMOO) will provide central direction and overall supervision for management and execution of the financial and manpower resources for the Wholesale Logistics Base of the Army as it pertained to contingencies, mobilization, special access and other special interest programs dictated by/for National Command Authorities, Joint Chiefs of Staff (JCS), OSD, the Commanders in Chief (CINC) and HQDA/the Army Secretariat. It encompassed the following:

- * As an integral part of the supported fighting force, resource management doctrine was developed utilizing various echelons of command and existing financial, manpower, and logistical networks to provide the necessary level of peacetime resource management support planning for various levels of conflict.

- * Identified PPBES functions which provide the link between operational requirements and the ability of AMC to deliver logistic needs/supplies to operating units. AMC acquired the requirements necessary to resource force structure, plans, missions, and training to support Army unit readiness for war.

- * Development of an effective funding/manpower internal control system and served as "honest broker" among competing resource requirements, analyzing results and adjusting allocations as priorities changed.

- * Acting as principle authority and senior advisor on financial management for sensitive, classified programs, mobilization planning, programming, budget formulation, and execution. Oversight for administrative control of funds for programs global in nature was exercised.⁶

⁶DCS for Resource Management Point Paper, 1 Dec 88, subj: Formation of AMC Resource Management Contingency/Mobilization Operations Plans Office.

Resource Management Programs and Projects

Fiscal Year 1989 was a stable year organizationally and operationally for the Programs and Projects Office. There were no management problems of significance, and the office concerned itself with accomplishing its mission activities. Major activities involved the Resource Management Workshop (conducted two courses for approximately 32 students each); Resource Management Evaluation Survey (performed scheduled on-site surveys at three major subordinate commands); produced quarterly issues of the Resource Data Book; developed an Executive Training Guide for Financial Management; and performed ongoing liaison between HQ AMC and the U.S. Army Management Engineering Activity.

Contract Cost Performance

On major acquisition contracts, DODI 7000.2 required that contractors use cost schedule control systems that met DOD Cost/Schedule Control Systems Criteria (C/SCSC). The Contract Cost Performance Division is responsible for ensuring that the systems complied with the C/SCSC. The requirement applied to non-firm-fixed-price contracts larger than \$40 million if for development, or \$160M if for production. During FY89 the division conducted 66 in-plant reviews on contracts with a total value over \$3.0 billion.

DODI 7000.10 required the application of cost performance reports on non-firm-fixed-price contracts over \$2 million. A review was accomplished on all acquisition plans furnished by the DCS for Procurement to ascertain their compliance for proper contract cost performance reporting. Monthly Cost Performance Reports (CPRs) were received from contractors, and independent analyses of cost and schedule status and estimates of final cost were completed in compliance C/SCSC. During FY89, 324 CPRs were received on contracts having a total value of \$2.5 billion. Monthly analyses were provided on significant cost and schedule variances, and independent estimates of final contract cost were submitted to the DCG for Research, Development, and Acquisition.⁷

Based on these analyses, AMC provided information to the Deputy Assistant Secretary for Program Evaluation in OASA(RDA), and reviewed, as required by that office, the contract cost portion of major acquisition reports from PEOs and PMs (e.g., Selected Acquisition Reports, Program Status Reports, Unit Cost Reports, and Defense Acquisition Executive Summary Reports). Coordination was established with the MSCs and a contractor to achieve an effective computer program to work on the Operational Baseline Cost Estimate project hardware for use at HQ AMC and all MSCs. The proper management and cost control of programs was essential and should have been equivalent to other acquisition programs. Although the AMC Chief of Staff had published a policy to this effect, it has not been determined whether it was properly implemented.

The Autonomous Precision Guided Munitions (APGM) program involved two consortia made up of 21 major contractors in 8 countries (3 U.S., 2 Canada, 3 Germany, 2 Spain, 2 Italy, 3 France, 2 Turkey, 2 The Netherlands). The APGM International Program Office (IPO) required that all the contractors meet the intent of the DOD's Cost Schedule Control Systems Criteria (C/SCSC) with respect to cost/schedule performance measurement and reporting. Since each country had a unique approach to contract cost control, the challenge was to implement a consistent integrated approach to provide the IPO with valid cost data and early visibility of cost problems. AMC experts visited contractor plants to provide orientation and planning assistance, to be followed in FY90 by in-plant reviews which will ascertain their progress and provide assistance.

⁷Memorandum, C/S for Distribution, 29 Sep 88, subj: Contract Cost Control on Special Access Programs.

Management and Productivity

Mission and Organization

The DCS for Management and Productivity was authorized eight military and 96 civilian personnel at the beginning of the fiscal year, but at the end of FY89 there were seven military and 85 civilian employees. One military space was lost to resource the DCS for Ammunition, balance the Program Budget Guidance/Table of Distribution and Allowances, and satisfy the HQDA reduction. Two civilian spaces were part of a 36 civilian space reduction approved by the Headquarters Executive Resource Action Committee (RAC) for the AMC P7S Billpayer. Another civilian space was part of a three civilian space transfer to resource the Office of Total Quality Management (TQM). COL David W. Garner replaced COL Gifford D. Wilson as the DCS for Management and Productivity on 21 November 1988 and Mr. William M. Ferron was the Assistant DCS for Management and Productivity.⁸

Defense Management Review

In July 1989, the Office of the Secretary of Defense (OSD) published the Defense Management Review (DMR).⁹ In anticipation, the Army formed the Army Management Review Task Force. AMC, in turn, convened a three-team (management, logistics, research and development) task force led by a General Officer/Senior Executive Service (GO/SES) steering committee with daily guidance provided by an executive group.

The DCS for Management and Productivity had representatives in the executive group, led the management team, and provided administrative/ADP support to the entire task force. The AMC task force submitted its report to Army on 15 August 1989. It consisted of AMC initiatives and analysis of initiatives proposed by the Army.

The AMC report was to be incorporated into the Army response to OSD on 16 October 1989 with certain modifications. The DCS for Management and Productivity, in conjunction with the DCS for Program Analysis and Evaluation, DCS for Resource Management, DCS for Supply, Maintenance and Transportation, and DCS for Development, Engineering and Acquisition, provided costing data to DA for MDEP's developed from the Army submission to OSD. Many of the AMC initiatives were expected to come down from OSD as Program Budget Decisions. When received, the initiatives will be scheduled for implementation in FY91.

National Security Review #11

A Plans and Projects Division study group was established in early 1989 to develop information which would as a basis for unified command positions on questions presented by the new administration's transition teams. This effort eventually provided the substance for briefings and testimony for the review of defense management practices (Defense Management Review) directed by National Security Review #11 which was chartered by the President.

⁸DCS for Management and Productivity Historical Submission, FY89. Hereafter, all information is from this source unless otherwise indicated.

⁹Dick Cheney [Richard B. Cheney, Secretary of Defense] *Report to the President: Defense Management* (Jul 89).

The study group developed comparisons and analyses of the three services' approach to materiel acquisition and logistical support while presenting analyses demonstrating the advantages of the Army's single materiel acquisition and support organization. The rationale for unifying that structure with a headquarters element was given special emphasis. The broad scope of missions for which AMC as a command was responsible was shown, and the group developed explanations and graphic representations of the integrative role that HQ AMC played in the highly complex business of acquiring and sustaining equipment for Army. It presented data and performance indicators which demonstrated an increased level of activity for the command in the face of decreasing resources. Also, the extensive effects from the Army's implementation of the Packard Commission's recommendations and their extensive effects on AMC were described.

The information and analyses developed were used by the Chief of Staff, both Deputy Commanding Generals, and the Commanding General, AMC in various meetings and testimony. The audiences included members of the presidential administration transition teams, Defense Management Review teams, the Army Management Review Task Force, Congressional staffers, and members of Congress.

Base Realignment and Closure Actions

In December 1988, the Defense Secretary's Commission on Base Realignment and Closure (BRAC) issued its report. The Commission recommendations for closure and realignment, which were subsequently authorized by Congress, affected 145 installations. Of this number, 86 were scheduled for complete closure, 5 for partial closure, and 54 will experience a change, either an increase or decrease, as units and activities are relocated.

Based on the recommendations 14 AMC activities were slated for closure: Fort Wingate Army Depot Activity; Navajo Army Depot Activity; Jefferson Proving Ground; Materials Technology Laboratories; Pontiac Storage Facility; the Lexington portion of Lexington-Blue Grass Army Depot; Alabama Army Ammunition Plant; and Coosa River Storage Annex. The missions and functions of these eight activities were to be relocated to other AMC installations. Two other activities (Umatilla Army Depot Activity and Pueblo Army Depot Activity) were set for realignment to the maximum extent possible by FY95, in order to facilitate closure upon completion of chemical demilitarization. The missions and functions of Pueblo and Umatilla Army Depot Activities will eventually be relocated to other AMC installations. Other actions minimally impacting AMC were the sale of 900 acres at Indiana Army Ammunition Plant, the sale of 100 acres at the Nike Site in Aberdeen, Maryland, and the closure of Wherry Housing at St. Louis, Missouri and Manassas, Virginia. AMC scheduled all closures for implementation and realignment action between 1 January 1990 and 30 September 1991 and complete these actions by 30 September 1995.

Strategic Long-Range Plan

In October 1988, the Command Group met in executive session at Fort Myer, Virginia, to determine AMC's course for the future. This session provided the framework for a white paper entitled *AMC's Long-Range Planning Vision*, and the development of a new strategic long-range plan (SLRP). Published in January 1989, the paper contained guiding principles, presenting trends likely to have the greatest impact on the future and mission areas needing new strategies. The paper became the start-point for fulfilling a new Army requirement for all MACOMs to prepare long-range plans reflecting requirements 10-20 years into the future. Teams representing each Army functional area identified influencing factors, and developed long-range goals and objectives for the approval of the Command Group.¹⁰

¹⁰Memorandum, GEN Wagner for all Employees, AMC, 21 Feb 89, subj: AMC's Long-Range Planning Vision.

AMCLOG 21

During FY89 there were 575 AMCLOG 21 Mission Area Analysis (MAA) issues, identified during the FY85, FY86, and FY87 MAAs, in the AMCLOG database. An additional 94 issues were identified during the FY89 MAA. Forty-five Army Logistics Research and Development (Log R&D) AMCLOG 21 MAA issues were incorporated into the USAF Log R&D *Brown Book* as needs statements covering the task areas of arming, fueling, fixing, manning, and moving. This was the first time the Army's logistics, research and development issues were merged with the US Air Force. The AMCLOG prioritization process continued to be used more and more in the prioritization of AMC issues. During FY89 the AMCLOG 21 prioritization process was used in the prioritizing of military construction, Army (MCA) issues and information management requirements. This process will also be used to prioritize the AMC SLRP objectives.

The 669 AMCLOG 21 MAA issues were consolidated into 32 generic issues to comply with the AMC IG findings of August 1988. These generic issues were cross referenced to the DOD Logistics 2010 and DA Long Range Logistics Plan goals and objectives. These generic issues were provided the HQ Staff as a baseline for development of The Army Plan (TAP) input. The 32 AMCLOG 21 generic issues were also provided to the SLRP functional teams for consideration in developing the AMC SLRP goals and objectives. All 32 issues were included in the SLRP objectives. Finally, the AMCLOG 21 implementation methodology will be used to develop and execute the SLRP plans of action to achieve the SLRP objectives.¹¹

Internal Controls for AMC

The DCS for Management and Productivity administered the Internal Control program for the U.S. Army Material Command. To ensure a general understanding and application by all commanders and managers, emphasis was continued on the GAO Standards for Internal Controls in the Federal Government as published in Chapter 2 of AR 11-2, Internal Controls.

A network of command and installation internal control program administrators was maintained to distribute program guidance and requirements; provide training, instructions and assistance to managers; maintain documentation on assessable units and checklist coverage, status of reported internal control weaknesses and positions with internal control responsibilities warranting coverage in exchange information on problems identified by sources outside the command (e.g., audit and the media); monitor overall compliance with program objectives; develop and staff required reports; and keep the commander and staff advised to ensure a sound basis for the annual assurance statement.

There were approximately 20 communications issued to field administrators and field activities providing them with guidance or pertinent program information. Special emphasis was placed in providing updates to the Management Control Plan. The Manager's Guide to Internal Control Review Checklists was widely distributed to headquarters and field elements. Procedures were established to ensure that Requesting, Approving, and Authorizing officials for DD Form 1610 were annually provided with guidance on their internal control responsibilities, to include a copy of the Reference Sheet for Issue of DD Form 1610, and the Travel checklist.

In FY88, the U.S. Army Armament Research, Development and Engineering Center developed a computer slide show on the Internal Control Program. A set of instructional slides has since been developed. Additional slides from the U.S. Army Management Engineering Training Activity (AMETA) Course 141, and slides from the Army Internal Control Office presentation were being incorporated into

¹¹FY89 AMCLOG Mission Area Development Plan.

a package for distribution to field activities. The slide presentation could be used as a computer slide show or as originals for reproduction.

A distribution system for transmittal of Audit Advisory Reports to major subordinate commands and separate reporting activities Internal Control Administrators was established. This system ensured that administrators were aware of existing audit advisory reports which available for the appropriate action.

The *Material Weakness Point of Contact Guide* was developed and distributed to points of contact for material weaknesses. The guide outlined the responsibilities and procedures for documenting and reporting on material weaknesses. It also provided advice on dealing with auditors reviewing the status of material weaknesses.

The DCS for Management and Productivity conducted Policy Compliance Reviews of assigned functional responsibility, including internal control program administration. In FY89, the DCS for Management and Productivity conducted policy compliance reviews (PCR) at the Communications-Electronics Command (CECOM), Missile Command (MICOM), Tank-Automotive Command (TACOM), and Test and Evaluation Command (TECOM). The DCS developed and distributed guidance which provided an outline of key points to examine for implementation of internal control requirements. These guidelines were provided to all PCR points of contact for incorporation into each review. They were also provided to MSCs and SRAs for their information.¹²

Streamlining the Headquarters

This was an initiative of the DMR conducted in the summer of 1989. Its intent was to reduce headquarters staffing by refocusing on the essential responsibilities of a command headquarters and by eliminating manpower that was required either to address issues that were already under the purview of subordinate AMC activities or to perform functions that provided no "value added" to the accomplishment of AMC missions. The initiative generated recommended savings of 267 civilian and 38 military spaces to be achieved by the end of FY92.

In developing recommendations for this initiative, the Headquarters AMC Streamlining Team relied heavily on an organizational/operational concept approved by the AMC Command Group in July 1989 and on the findings of a "Value Added" study conducted earlier by the DCS for Management and Productivity. The streamlining effort did not end with the submission of AMC's DMR recommendations in August 1989. Implementation of Streamlining recommendations and further refinement of HQ AMC operations was expected to extend through FY90.

Review and Analysis (R&A)

The HQ AMC R&A continued through FY89 as the primary system for measuring performance toward the accomplishment of AMC's mission, goals, and objectives. The Command R&A was accomplished on a quarterly cycle to provide the Commanding General with a picture of the Command's quarterly performance. Trend data was also displayed for the previous two years. The Command R&A was in book format and prepared by the Review and Analysis Division, using input from the staff. A summary matrix, prepared for each quarter, highlighted those indicators that were out of tolerance. The complete Command R&A book was distributed to each MSC for their information and use. The books are also available to the AMC Command Group for their review.

¹²Memorandum, MG Harrison for Secretary of the Army, 6 Oct 89, subj: FY89 Annual Assurance Statement on Internal Controls.

In addition to the large, overall R&A book, a succinct, comprehensive, R&A book titled the *Summary Command Analysis Notebook* (SCAN) was also provided to the Commanding General, other members of the Command Group, as well as the commander of each MSC. This quarterly R&A publication consisted of 80 major performance indicators that were grouped into five integrated areas: Program Execution, Product Acquisition, Product Support, Product Quality, and Staff Support. SCAN was designed to enable the reader to take a quick look at the overall AMC performance. Continued improvement in the Command R&A was achieved by the utilization of automated procedures, thus reducing the preparation time and notably improving the professional quality of the publications.

Army Communities of Excellence

Army Communities of Excellence (ACOE) was initiated in 1988 to enhance pride by fostering excellence in Army facilities and in the services they offer. It capitalized on programs already in operation and focused on community resources. ACOE stressed local initiative and total Army community involvement in improvements. ACOE contributed to Army readiness by strengthening the commitment to excellence throughout the Army.

Implemented as an installation commander effort, installations set their own standards and selected projects and programs to improve their facilities and operations. Higher levels (Army, AMC, and MSCs) set general guidelines for services and installation design, and insured an extensive interchange of information. In AMC, implementation stressed the use of TQM techniques to achieve installation excellence.

An important part of the program was the recognition of achievement in obtaining excellence in installation operations and facilities. HQDA established Commander in Chief's and Chief of Staff's Awards for the top installations and Special Recognition Awards for individuals and teams. AMC was very successful in the first year of competition for these awards, winning two of the three Chief of Staff's Awards for installations in the Continental United States. Winners were Fort Monmouth in the large installation category and Sacramento Army Depot in the small installation category. In addition, Longhorn Army Ammunition Plant was awarded special recognition as a team. Two individual awards were presented to Mr. William A. Friday at Redstone Arsenal and to Mr. Edward D. Florreich, AMC Materiel Readiness Support Activity. Winners of the Department of the Army awards were also presented with the AMC Commanding General's Award for Installation Excellence. This award was also presented to the U.S. Army Aviation Systems Command (AVSCOM), the AMC nominee for the Army awards in the medium installation category.¹³

Secretary of Defense Productivity Excellence Awards Program

The Secretary of Defense Productivity Excellence Awards Program was established to recognize individuals/groups who made substantial contributions to productivity improvement. The program had two levels of recognition: the OSD Productivity Excellence Award for individuals/groups whose actions resulted in at least \$1 million in annual savings; and OSD Letter of Commendation for individuals/groups who produced annual savings of at least \$100,000.

AMC nominated 24 individuals for the 1988 OSD Productivity Excellence Awards and 12 for the OSD Letters of Commendation. The Secretary of Defense presented Productivity Excellence Awards to three

¹³Memorandum, COL David W. Garner for Distribution, 7 Dec 89, subj: Army Communities of Excellence 1989 Awards.

AMC employees at a Pentagon ceremony on 9 January 1989. AMC had 13 productivity exhibits on display at the Pentagon during that month.

Watervliet Arsenal won the 1989 President's Council on Management Improvements award at the Second Annual Conference on Federal Quality and Productivity Improvements held at the Sheraton Premiere at Tysons Center, Virginia. AMC nominated Watervliet Arsenal, Sacramento Army Depot, Rock Island Arsenal, and Electronics Technology and Devices Laboratory for the 1990 Office of Management and Budget (OMB) Quality Improvement Prototypes Award. Sacramento Army Depot was selected as one of the finalists and was visited in November 1989 by the OMB survey team. This award will be presented at the Third Annual Conference of Federal Quality and Productivity Improvements in June 1990.

In September 1989, AMC nominated 51 individuals for the 1989 OSD Productivity Excellence Awards and 31 for OSD Letters of Commendation.¹⁴ The awards were scheduled to be presented in January 1990.

The Army Study Program (TASP)

Studies and analyses were analytical examinations that assisted AMC and Army decisionmakers. They contribute to a greater understanding of relevant issues and lead to conclusions and recommendations for use by decisionmakers. AR 5-5, *Army Studies and Analyses*, dated 15 October 1981, established policies, procedures, and responsibilities for the administration and management of the Army Study System. The implementation of AR 5-5 within AMC was characterized by centralized review and monitorship, and decentralized development and funding. AMC's participation in TASP in FY89 included 13 inhouse studies, six contract studies, and two combined contract/inhouse studies.¹⁵

AMC Policy Circular

AMC Circular 340-6, *Direct Communication Policy*, was published on 1 February 1989. The circular was prepared to delineate the Command's policy governing communication by AMC field commands/activities with other DA and DOD elements and Federal agencies.

On 12 December 1988 the *Staff Officer's Guide-Extension* (SOG-X) was distributed to all AMC activities. SOG-X provided a cross-reference of staff responsibilities and the HQ AMC proponent or primary point of contact. Although SOG-X was initially distributed as a separate document, it will be included as an appendix to AMC Pamphlet 1-6, *Staff Officers Guide*, when the pamphlet is revised.¹⁶

PEER Test Study

The Productivity Enhancements, Efficiencies, and Rewards (PEER) program permitted installations an opportunity to focus on the TQM philosophy during this period of declining budgets. Employees

¹⁴Memorandum, COL Garner for HQDA, 15 Sep 89, subj: Secretary of Defense Productivity Excellence Awards.

¹⁵TROSCOM\NRDEC, GIST (Advanced Study Summary), subj: Assessment of Flechette Hazards to Personnel; AMSSA, GIST Math of End Item Redunancy; AMSAA, GIST Cost Trade-off Analysis of Field Artillery Projectile Pallet Configurations; AMSAA, GIST Combat Damage Requirements for Repair Parts in the Korean Theater; AMSAA, GIST Hawk Level of Repair Analysis; AMSAA, GIST Dismount Soldier Survivability.

¹⁶AMC News, Dec 1989.

participated in and were rewarded for working together to systematically reduce operating costs. The DCS for Management and Productivity was the POC for the PEER program.

Pine Bluff Arsenal was the first installation in AMC to implement the command's PEER program. Under PEER, both the Pine Bluff installation and its employees were earning significant cash rewards for their commitment to the complementary goals of quality and productivity.

During a relatively short study period of 3 months, Pine Bluff Arsenal developed and structured a plan to improve quality management and to reduce its operating costs for a constant level of work. Specific enhancements were placed in the plan for all elements of the Pine Bluff organization. Proposed efficiencies will be phased in over three years to limit personnel dislocations. The plan consolidated all quality and productivity efforts of the Arsenal into a focused effort to achieve specific savings goals.

PEER employed a concept of hard dollar savings. This meant that money for awards could only be generated by reduced expenditures. Baselines for workload, personnel costs, and non-personnel costs were established prior to each fiscal year. These baselines were compared with actual production and expenses after the conclusion of the fiscal year. If the baseline workload had been performed but not all of the baseline budget spent, then monies were available for PEER rewards. To ensure proper management of the program, Pine Bluff's commander entered into a written contract with AMC's Chief of Staff to execute the approved PEER plan. As an additional control, the internal review and audit compliance organization of Pine Bluff's headquarters had responsibility to audit the entire process from the development of baselines to the calculation of awards.

PEER provided for the creation of an employee award pool composed of 50 percent of the personnel-related savings. The installation commander retained control of 50 percent of the non-personnel savings for installation investments or to supplement the employee award pool. The balance of the savings was normally to be returned to HQ AMC.

Civilian employees earned a share in the award pool for each full month of employment during the fiscal year in which hard dollar savings were generated. The dollar value of each share was the same, regardless of an employee's pay grade. This equal or peer-type relationship for the sharing of PEER savings motivated many Pine Bluff employees to show extraordinary initiative to improve Arsenal operations.

Pine Bluff's PEER plan specified aggregate budget reductions of 14 percent for FY89 through FY91. The audited results for FY89 were impressive. Fifty-nine full-time positions were permanently eliminated while production quality was maintained at very high standards. Over \$2.4 million in non-personnel savings was achieved by reducing purchased services, overtime, travel, supplies, and equipment. A total savings of \$3,991,932 was divided in the following manner: \$1,995,966 (50 percent of total) refunded to HQ for application against an FY90 budget reduction, \$816,020 retained by the Pine Bluff commander for installation investments, and \$1,179,946 distributed to the arsenal work force. Full-time employees, who worked all 12 months in FY89, received PEER awards of \$874 each.

Commercial Activities Management Program

The Commercial Activities (CA) program had proven its effectiveness in reducing manpower and financial requirements to perform commercial-type and commercially-available functions in support of AMC missions. Since 1980, 78 studies had been completed, generating 250 military and over 8,900 civilian spaces as a result of contract conversions or the implementation of CA management study staffing recommendations. Its coverage and utilization may well be expanded by commanders faced with periods of diminishing budgets to free up resources for priority missions and functions.

Although the program was experiencing reductions and negative publicity, the reality of management improvement through internal management study and through competition of Government with industry was undeniable. In 1989, work was commenced on three HQDA-approved AMC commercial activities study action plans, including the formation of command CA cost study task groups and drafting CA functional performance work statements. HQ AMC also investigated and tested new productivity-producing study initiatives similar to CA cost study efforts which can minimize the adverse effects of CA solicitations.

Total Package Fielding

During a Total Package Fielding (TPF) functional area assessment pre-brief conducted in August 1984, the AMC Commanding General expressed the view that a central office for TPF was essential at each MSC. The DCG for Materiel Readiness was tasked to accomplish this mission and in September 1984 transmitted a message to the MSC activities having materiel distribution responsibilities which stated the need to establish a central TPF office. A subject matter assessment (SMA) was conducted during FY87 and recommendations were made for the standardization of TPF in the Materiel Management Directorate.

An AMC Inspector General Activity inspection of TPF at AMC's MSC fielding commands between May and November 1988 found that TPF organizational structures had not been standardized. This finding resulted in a tasker to the DCS for Management and Productivity from the DCS for Supply, Maintenance, and Transportation, who had the lead in this issue. The tasker requested a detailed action plan and milestone schedule for resolution of the finding identified in the subject inspection. The DCS for Management and Productivity recommended a review of the 1987 SMA of TP/UMF to determine if the recommendations were still valid.¹⁷

In response to the tasker, an action plan and milestone schedule was developed and a review of the FY87 SMA was made, in addition to a review of the organization and functions manuals and TDAs of those MSCs having responsibilities for TPF (i.e., AMCCOM, AVSCOM, CECOM, MICOM, TACOM, and TROSCOM). A tasker was also developed which requested from those MSCs data pertaining to their organization structure, alignment of functions, identification of each organizations involvement, resources expended toward this effort, and the extent of coordination with external organizations. After completion of the review, it was determined that MSC fielding commands were basically in compliance with a standardized TPF system that provided clear and direct lines to serviced organizations.

Arroyo Center Projects

The Arroyo Center was the Army's Federally Contracted Research Center (FCRC) for studies at the Rand Corporation. Its mission was to conduct long-term, deep-reaching policy analysis for the Department of the Army leadership. The Deputy for Research, Development and Acquisition and the Chief Scientist participated in FY89 semiannual meetings of the Arroyo Center Policy Committee (ACPC) to review and approve the proposed research programs and provide guidance to Rand. Of the 57 ongoing projects, these five were either sponsored or co-sponsored by AMC:

- * Developing Ammunition Requirements and Production Schedules to Increase Combat Capability (AMCCOM);
- * Artificial Intelligence (AI)/Robotics for Combat Systems (LABCOM);
- * Future Army Warfighting Ideas and Technologies (TRADOC/LABCOM);

¹⁷Memorandum, DCS for Supply, Maintenance, and Transportation to DCS for Management and Productivity, 15 Mar 89, subj: Total Package Fielding Inspection by AMCIG.

- * Combat-oriented Logistics Management System (HQ AMC/TRADOC);
- * Visibility of Improved Support Options (VISION), (HQ AMC/TRADOC);

Advance Study Summary

An advance study summary was an informal one-page summation of completed studies and analytical efforts, the purpose of which was to keep the Commanding General, AMC informed of existing AMC studies and analyses, their quality, and their impact in the management of AMC. Implementation of AMC-C 5-4, 15 November 1988, established policy and procedures for preparing an advance study summary. AMC study proponents were required to prepare an advance study summary for every analytical effort that resulted in a briefing or written report that was either sponsored by or performed within AMC, except for scientific research and routine or recurring reports.

The format of the advance study summary included principal findings, main assumptions, principal limitations, scope of effort, objectives, basic approach, reason for performing the study or analysis, impact of the study, sponsor, principal investigator, point of contact for questions or comments, and the Defense Technical Information Center (DTIC) or Defense Logistics Studies Information Exchange (DLSIE) accession number. Advance study summaries were required within 15 days of publication of a final report or briefing, to provide timely study and analytical information to HQAMC and subsequently all AMC activities.

Twenty-one advance study summaries were submitted in FY89. Although the Chief of Staff, AMC approved the AMC-C 5-4 in 1QFY89, the field response was not evident until the third quarter of FY89 when seven summaries were received from DESCOM on Depot Management, and another from the Materiel Readiness Systems Activity (MRSA) on sustainment. During the next quarter, 11 summaries were received from HQ AMC on sustainment, 6 from DESCOM on depot management, 2 from USASAC on security assistance, and 3 from Army Materiel Systems Analysis Activity (AMSAA) on systems analysis and one each on producibility and production. Advance study summaries received from the field were forwarded to the Commanding General, AMC for review and comment, then to the MSCs/SRAs for information and dissemination. Plans to automate advance study summaries were in process.¹⁸

AMC Management Analysis Study Awards

The Management Analysis Study Awards were presented annually by the Commanding General, AMC, to an individual or group for the best management analysis study conducted and completed during the previous calendar year at the MSC and installation levels. Winners were determined by a panel of judges who reviewed the studies in accordance with criteria established in AMC Regulation 5-13.

The winner of the FY89 MSC level award, Mr. Pat McIllece, was a GS-13 Management Analyst in the Management Directorate of U.S. Army Armament, Munitions and Chemical Command (AMCCOM), and served as the team leader on the study, *How Information on AMCCOM Items is Distributed to the Field*. Mr. Ray Hart, GS-12 Management Analyst, and Mr. Joe Holmes, GS-9 Management Analyst, were team

¹⁸DESCOM, Work in Process Study, 14 Jun 89; DESCOM, Management Study of Loose Issue Space Requirements, 13 Sep 88; MRSA, Just-In-Time (JIT) Inventory; DESCOM, Analysis and Effect of Non-Productive Hours, 22 Feb 89; DESCOM, Accountability of Small Arms, 21 Mar 89; DESCOM, Proposed Chain of Responsibility for Lexington-Blue Army Depot, 21 Mar 89; DESCOM, On-The-Spot Award System at Tobyhanna Army Depot, 26 Apr 89; DESCOM, Procurement Load, 30 Mar 89; HQ AMC, AMC Radiation Protection Personnel Study, FY88; AMSAA, GIST Plant Equipment Package Management Reporting; AMSAA, GIST Standard Cost and Effectiveness Methodology for Weapon System Evaluation.

members and made major contributions to the study effort. Their study represented a comprehensive and in-depth look at how AMCCOM responded to problems reported by the field. The study recommendations ensured that a system was in place to resolve field problems in an expeditious manner, with the dissemination of the solutions to every DOD organization with a need to know.

The winners of the FY89 installation level award, Ms. Susan J. Lavieri and Mr. Richard M. Valdez, were GS-11 Management Analysts in the Directorate of Resource Management at Sharpe Army Depot. Ms. Lavieri and Mr. Valdez developed a totally different and more efficient method of receipt, storage, and issue of tires. Implementation of this new system resulted in an annual savings of \$799,000, created the ability to utilize 71 percent more warehouse cubic space, and consolidated Sharpe Army Depot's tire storage operations into one warehouse. The application of the storage method can be applied to other depots with similar operations.

AMC Sponsorship of Conferences

AMC Regulation 1-12, Sponsorship of Conferences, requires all AMC conference sponsors to use the Conference Site Selection Model (CSSM) for determining the most cost effective conference site. During FY89, each MSC identified a point of contact for managing and implementing the requirements of AMC Regulation 1-12, and developed a supplement to the current guidance. The definition of a conference according to AMC Regulation 1-12 was also changed to include training conferences and workshops which had been previously excluded from the regulation's requirements.

Policy Compliance Review Program

The PCR Program was developed during the first quarter of FY89 to assist MSCs in controlling visits to their headquarters and other installations. AMC Regulation 11-45 formally instituted the program, prescribing command policies, responsibilities, and procedural guidance for planning, scheduling, conducting, and documenting the PCRs.

Policy Compliance Reviews were scheduled visits by staff elements of HQ AMC to the SRAs, MSCs and their subordinate elements. These reviews were conducted during specific time frames (windows) designated by the MSCs and SRAs. They were conducted at each MSC or subordinate activity no more than once each fiscal year but at least every two years. The purpose of the PCR was to ensure compliance with policy and to identify and correct policy, procedures, or systems problems at HQ AMC, its MSCs, or SRAs that were impediments to AMC mission accomplishments.

When a DCS or separate office chief determined that a scheduled PCR was not required or needed to be conducted outside a scheduled window, a request for exemption was forwarded to the Chief of Staff, AMC, through the DCS for Management and Productivity for approval. During FY89 seven exemptions to the PCR program policy were granted and six exceptions to conduct PCRs outside the established windows were approved. Approximately 20 DCS and separate office chiefs conducted PCRs in their functional areas during FY89.

Army Ideas for Excellence Program

AMC continued to be a significant force in the Army Ideas for Excellence Program, previously known as the Army Suggestion Program. In FY89, it had tangible savings of \$21,467,345, with \$1,128,675 awarded to 4,526 employees. The adoption rate was 29 percent and the participation rate was 14 percent.

During FY89, HQDA decided to merge the Model Installation Program (MIP) with the Army Suggestion Program (ASP). The change was being formalized in a new Army Regulation, *Army Ideas for Excellence Program*. The two programs were merged mainly to eliminate duplication of effort. The MIP

and the ASP had been processed basically the same since October 1987. Established in 1984 by the DOD, MIP was designed to eliminate unproductive or obsolete regulations and procedures. It allowed installation Commanders to test an idea at their command for a specified period of time. Under the Army Ideas for Excellence Program (AIEP), ideas were still tested during an evaluation process.

Throughout the command, emphasis was being put on increasing participation in the AIEP, particularly military participation. Events being planned to facilitate this goal included month-long promotions, picnics, and articles in local official newspapers. AMC held a workshop which included participants from all of the MSCs, members of the DA staff and other MACOMs. The workshop was effective in communicating and resolving common problems, clarifying policy issues and sharing ideas to better administer the program. At the urging of all participants, headquarters planned to make this event an annual affair.

The National Association of Suggestion Systems (NASS) Conference, held in St. Louis, Missouri in September 1989, was attended by representatives from most of the MSCs. This annual conference was attended by the private sector as well as by all government agencies. It was the only source of training on suggestion processes with workshops offered on such varied subjects as evaluator training, legal guidelines, goal setting and effective leadership skills. Displays by companies promoted items, and the conference allowed private sector agencies and government agencies the opportunity to share ideas on program administration. The Department of the Army used this opportunity to host a two-day workshop for Army participants prior to the NASS Conference.

Productivity Measurement and Evaluation Program

Executive Order 12637 required Defense agencies to report against selected functions into the Presidents Productivity Program. Since the issuance of the executive order, the Army had placed the following functions into the Presidents program: Depot Supply, Depot Maintenance, Military Pay, Commercial Accounts, Disbursing and Travel, Recruiting for Active Reserve, National Guard, Army Family Housing, Medical Services, Real Property Maintenance, Military Personnel Management, Reserve Personnel Management, Commissaries and Executive Level Software Control (Information Management). By 30 September 1989, AMC had reported against Supply Depot Operations, Depot Maintenance, Inventory Control and Munitions and Weapons Production and Development. Reported improvements were to reflect an annual productivity increase of three percent.

Military services and Defense agencies continued to receive criticism from the OSD and the Office of Management and Budget (OMB) for the lack of concentrated efforts in the President's Productivity Improvement Program as required by the executive order. This criticism also extends to the services' inability to develop meaningful and accurate output measures and input data to arrive at the cost of the output product.

To this end, AMCCOM briefed HQ AMC on their recently developed Productivity Measurement Program (PMP). AMCCOM had pursued an extensive implementation of PMP to cover their organization and will have total space coverage of the command by the end of FY91. An information paper on PMP, signed by the AMCCOM Commander, was distributed to all HQ AMC offices and MSCs. Two analysts from the DCS for Management and Productivity's Management Engineering Team attended a PMP workshop to become familiar with the procedures of PMP implementation. Other AMC MSCs had Productivity Measurement Systems in place, but during FY89 AMCCOM devoted the greatest effort in this area.

Other Management Engineering efforts accomplished included the rewrite of AR 5-4, *Management of the Army Productivity Improvement Program*, and technical assistance and guidance on Methods and Standards and other management studies. Staff supervision was also provided for the AMC-wide Efficiency Review of the Major Subordinate Commands Resource Management Organizations, identifying 83 management

improvements, of which 76 were approved for immediate implementation with approximately \$4.0M cost avoidance savings.

The DCS for Management and Productivity served as the proponent for TQM and performed a TQM review of all AMC publications to purge or eliminate those publications not needed for mission accomplishment.

Productivity Based Incentive System

During FY89, HQ AMC established AMCR 5-26, *Productivity Based Incentive System (PBIS)*. The regulation required all AMC office chiefs, MSCs/SRAs, and their subordinate activities to provide an annual report of all existing Productivity Based Award Systems.¹⁹ During FY89, only DESCOM had attempted to implement PBIS, and two DESCOM installations, Red River Army Depot (RRAD) and Sacramento Army Ammunition Depot (SAAD), tested the PBIS process. Both of these installations began their gain sharing programs prior to publication of the regulation.

Red River Army Depot established a 6-month depot-wide test of Productivity Gain Sharing (PGS) that began on 1 October 1988 and ended 31 March 1989. The test included all organizational elements of the depot. The on-board civilian strength during this period was 5,222. Military were not included in the gain sharing process. HQ DESCOM reported a savings of \$2.1 million for the 6-month period. Based on a 50-50 share, \$1.03 million was awarded to participating civilians and the remainder was retained by the installation.

The Productivity Based Award (PBA) Program at SAAD began 1 April 1988 and ended on 31 March 1989. The one-year test focused on the General Supply Division (Directorate of Supply) and the Receiving Inspection Branch (Directorate of Quality) of the installation. The on-board strength at the end of the test was 315 civilians. The overall results of the test were that sick leave usage was reduced by 3, 7, 11, and 15 percent during each successive quarter, the cost per line item processed was reduced by 5, 10, 15, and 20 percent, respectively, each quarter, customer complaints were reduced from 0.9 per 1000 to 0.551 per 1000 line items processed (a 39 percent decrease), and \$131,000 was awarded to participating employees. Based on a 50-50 share, this meant that a total of approximately \$260,000 was saved during the one-year test.

It should be noted however, that the PBIS gain sharing programs at both RRAD and SAAD have been suspended pending further review. An independent study team has been established to evaluate the PBIS programs at both installations. Until all problems are resolved, auditable baselines identified, and a reliable accounting system established no productivity based incentive system will operate in the U.S. Army Depot Systems Command. The independent study team expected to complete its evaluation by 1 October 1990.

AMC/Army Lessons Learned Program

The AMC Lessons Learned (LL) Program was begun in 1985 to document lessons from the National Training Center (NTC). The program had been expanded to include all of AMC LL. A lesson learned described an experience, observation, or accomplishment that may have been of value and used in an ongoing or future program. In this context, it documented a method of operation which may have wide application among the military services.

On 16 March 1989 the Joint Logistics Commanders (Army, Navy, Marine Corps and Air Force) signed a new memorandum of agreement, part of which permitted all services to share their lessons quarterly with

¹⁹AMC-R 5-26, *Management: Productivity-Based Incentive*, 18 Aug 89.

the other services. The service representatives will meet annually to discuss their programs and assure the exchange of information. AMC as lead service in FY89 hosted the annual meeting held on 20-21 April 1989 at HQ AMC. The Navy will host the 1990 meeting.²⁰

The Defense Logistics Studies Information Exchange (DLSIE), U.S. Army Logistics Management Center, Fort Lee, Virginia was designated as the AMC Lessons Learned Data Bank.

Defense Regional Interservice Support

The Defense Regional Interservice Support (DRIS) program was designed to promote interservice, interdepartmental, and interagency support within the DOD and participating non-DOD agencies. Its goals were to improve effectiveness and economy in operations by eliminating duplicative support services without jeopardizing mission accomplishments. An essential element for evaluating DRIS effectiveness and economy was information derived from data recorded on the Inter/Intraservice Support Agreement (ISA). AMC was the supplier for over three-quarters of its 1,500 ISAs, with a value (reimbursable plus non-reimbursable gross additional costs to the supplier) of more than \$275 million.

Most of the AMC DRIS efforts had been directed toward automation and reconstruction of the ISA database in the headquarters. Progress had been slow because of other higher priority efforts, limited availability of technical support for software applications, expiration of the ADP support contract in the third quarter, and a shortage of data input personnel. About 40 percent of the ISA data had been input to the automated database.

Productivity Capital Investment Program

The AMC Productivity Capital Investment (PCI) Program provided supplemental funding to support long-term productivity improvements. The PCI program obtained funding through the OSD Productivity Investment Funding, the Productivity Enhancing Capital Investment Program (PECIP), the Quick Return on Investment Program (QRIP), and the AMC Resource Self-Help/Affordability Planning Effort (RESHAPE) Program. The following illustrates the FY89 PCI Program:

²⁰Joint Agreement on the Joint Logistics Commanders' Lessons Learned, 16 Mar 89.

TABLE II-5
Productivity Capital Investment Program

Appropriation	Projects	Funding	Projected Benefits
RDTE	108	\$44.3M	\$56.1M
OPA 2/OPA 3	9	1.1	1.1
OMA	13	0.6	0.6
AMMO	13	1.0	2.8
APA	2	8.8	30.4
MCA	3	8.6	13.0
TOTAL	148	\$64.4M	\$104.1M

Source: DCS for Management and Productivity Historical Submission for FY89.

Contract Advisory and Assistance Services

Contract Advisory and Assistance Services (CAAS), formerly Managing Analytical Support Services, were managed under the provisions of AR 5-14 and consisted of four categories: Category A, Individual Experts and Consultants (Chapter 304, AR 690-300); Category B, Studies, Analyses, and Evaluations (AR 5-5); Category C, Management Support Services (AR 5-14); and Category D, Engineering and Technical Services (AR 700-4). A constrained resource environment and reports by government investigators of the lack of adequate controls had resulted in increased Congressional concern and oversight which had emphasized the importance of tightly managing CAAS. HQDA was scheduled to publish a revised AR 5-14 based on DOD Directive 4205.2, *DOD Contracted Advisory and Assistance Services*. AMC was developing an AMC Circular to replace AMC Supplement Number 1 to AR 5-14. All CAAS contracts were supported by an approved Management Decision Document. The approved MDD if forwarded to HQ AMC for review. The FY89 AMC CAAS program consisted of 12 sole source contracts for a total of \$50.9M and 15 competitive contracts for a total \$142.7M.

Defense Logistics Studies Information Exchange

The Defense Logistics Studies Information Exchange (DLSIE) was the repository for approximately 75,000 studies and models. It disseminated logistics and management information to defense components via custom bibliographies, catalogs, and microfiche. An automatic telephone answering and recording device was available for non-duty hours. DLSIE had an on-line data system that gave remote locations a dial-in capability to search and retrieve from its database. In accordance with AR 5-7, the DCS for Management and Productivity was responsible for the operational direction and control of DLSIE. The DOD Inspector General inspected DLSIE in August 1989 to evaluate its effectiveness in carrying out its assigned mission and meeting user requirements, and to determine whether DOD policy had been effectively implemented by the Military Services and DLA. The final report had not been published, but DLSIE's data base was expanded by 842 studies and 94 models in FY89.

Productivity Initiative with ServiceMaster Corporation

In the summer of 1988, the Department of the Army asked AMC to explore a new productivity initiative with private industry. This initiative was based on an unsolicited contract proposal from ServiceMaster Corporation, which was originally made to the Assistant Secretary of the Army for Installations and Logistics (ASA[I&L]) organization. In its unsolicited proposal, ServiceMaster offered the Army the same cost reduction and containment service that it was providing many of its private sector clients. AMC nominated the U.S. Army Armament Research, Development and Engineering Center (ARDEC) as a test site for the initiative. The HQDA then gave ARDEC permission to explore the ServiceMaster proposal in lieu of continuing a commercial activities (CA) cost study, which was announced to Congress in December 1980, but was never successfully completed.

The ServiceMaster concept centered on a technique which the company called task management. Under task management, onsite employees of ServiceMaster identified specific ideas for improving the efficiency of an installation's base support functions. These ServiceMaster employees then worked with the installation's in-house supervisors to assure the implementation of the cost saving ideas.

A contract awarded to ServiceMaster in August 1989 provided for a basic performance period during FY90 with options for FY91 through FY94. The contract required ARDEC to eliminate 47 full-time jobs in its base operations organization, which ServiceMaster was task managing. Net guaranteed savings to ARDEC in FY90 from this contract was supposed to be \$887,000 on baseline expenses of \$25.5 million. AMC retained the guaranteed savings from the contract in order to document hard dollar savings from the sole source contract. AMC will withhold authority to award options on this contract until guaranteed savings for the baseline workloads in the agreement have been verified.²¹

Establishment of SIMA (Provisional)

The command approved the establishment of the AMC Systems Integration and Management Activity (SIMA) on a provisional basis, effective 1 May 1988. Final approval by HQDA was still pending at the end of the fiscal year. The AMC Systems Design Activity, the AMC Systems Design Activity-East, and the AMC Logistics Programs Support Activity, a field activity of U.S. Army Depot System Command, were consolidated to form SIMA. Consolidation of the units included their mission, functions, personnel and other resources. Consolidation did not save any spaces, however, mission accomplishment was more effective and efficient. SIMA was based at the Letterkenny Army Depot, Chambersburg, Pennsylvania, but the duty stations of the employees remained unchanged. SIMA was resourced with no additional demands placed on HQ AMC or HQDA.

Transfer of Watercraft Maintenance Mission from TRADOC to AMC

HQ AMC approved the transfer of functions, manpower spaces, and dollars associated with watercraft drydocked from TRADOC. Thus consolidating responsibility for cyclic maintenance of Army watercraft becomes a depot level maintenance function once a craft is drydocked. On 22 September 1989, HQ AMC requested HQDA approval to transfer the mission, functions, and associated resources relative to watercraft drydocking from TRADOC to AMC. HQDA returned the request to HQ AMC on 11 October 1989 for further action. HQDA wanted an approved Memorandum of Understanding and a manpower audit trail before processing the request for transfer. Therefore, AMC tasked TROSCOM to complete the action.

²¹Memorandum, COL Garner for ARDEC, 27 Nov 89; Memorandum, Ms Ellen Kaiser for the Record, 25 Jan 90, subj: Minutes of Second Shared Savings Evaluation Board Meeting; Deputy for Resources and Management, Productivity Initiative in Process Review, 29 Nov 89.

Discontinuance of EPG Digital Test Company

In August 1987 Major General Charles F. Drenz, the Commanding General of TECOM, forwarded a concept plan to HQ AMC which primarily proposed the:

- * Discontinuance of the U.S. Army Digital Communications System Test Company (DCSTC) in the Electronic Proving Ground (EPG) at Fort Huachuca, Arizona;
- * Assignment of DCSTC's manpower and equipment resources to EPG;
- * Discontinuance of EPG's HQ Company and the establishment of a HQ Battalion;
- * Discontinuing EPG's Materiel Test Directorate and elevating its Electronic Surveillance and Security Test Division and Digital Methods and Technologies Test Division to the directorate level.

The objective of the concept plan was to improve the military environment for assigned soldiers, and to provide better quality and faster service to testing customers without increasing the requirement for additional resources. On 28 August 1987, HQ AMC provisionally approved the reorganization of EPG which was further documented by Permanent Orders 84-2, 16 December 1987. AMC Permanent Orders 114-1 discontinued the DCSTC effective 30 April 1989 and directed transfer of its mission and resources to EPG.

The EPG organizational structure improved the utilization and training of military personnel. Soldiers not dedicated to the accomplishment of continuing functions will be assigned to specific project(s) as opposed to being assigned to a test division/branch/company regardless of test workload. Also, the realignments facilitated the integration of developmental and operational testing.²²

Establishment of PM, Chemical Demilitarization (PMCP) (Provisional)

Army Acquisition Executive (AAE) Memorandum, 4 August 1988, directed the disestablishment of the PMCD within the PEO structure and transfer of the chemical demilitarization function and responsibilities to the Office of the ASA(I&L). Effective 1 October 1988, HQDA provisionally directed the operation of PMCD, pending a review and approval of the organization change proposal. Administrative support was provided by AMC.

On 29 April 1989, the CG, AMC informed the Under Secretary of the Army that the Chemical Agent Munitions Disposal System (CAMDS) Activity, Tooele Army Depot, would be placed under the operational control of PMCD. Concept plans for establishing PMCD and transferring the CAMDS Activity were forwarded to HQDA on 19 December 1988 and approved on 31 July 1989. The manpower authorization for PMCD was 12 military and 130 civilians while CAMDS was authorized 208 civilians.

U.S. Army Research, Development and Standardization Group-Japan

In January 1989, the AMC Chief of Staff announced to the U.S. international cooperative programs community that AMC intended to establish a Standardization Group in Japan. Technology exchange and cooperative research, development, acquisition and standardization (RDA&S) between Japan and the U.S. Army had reached a level comparable to that achieved between the U.S. Army and the North Atlantic

²²HQ AMC, Permanent Orders 114-1, 12 Dec 88; Executive Summary: Reorganization of the Military Resources of EPG into a Battalion Structure and the Elimination of EPG's Director For Materiel Test Position.

Treaty Organization (NATO) allies. Furthermore, the President and Congress had identified Japan and the Pacific-rim nations as a priority for future RDA&S cooperation.

The Army had established four other Standardization Groups serving five countries (Australia, Canada, the United Kingdom, Germany, and France). With the establishment of a comparable activity in Japan, the capability to benefit from technological advancements in Japanese defense related industries would be greatly enhanced. None of the three AMC Science and Technology activities already in Japan were capable of accomplishing the formal bilateral international cooperative RDA&S agreements mission.

In July 1989, HQDA approved AMC's concept plan to establish the U.S. Army Research, Development and Standardization Group-Japan (USARDSG-JA). AMC Permanent Orders 27-1, 6 April 1989, established USARDSG-JA on a provisional basis on 1 July 1989. AMC Permanent Orders 81-1, 5 September 1989, established USARDSG-JA permanently, effective 1 October 1990. Its assigned mission was to provide the senior AMC point of contact for the initiation of the Army research, development and standardization program activities and, as a secondary responsibility, coordinate matters of common interest to the AMC activities in Japan.

USARDSG-JA was staffed with a colonel and two civilians acquired from within AMC. USARDSG-JA and the other four Standardization Groups were all under the operational control of the Chief, AMC Office of International Cooperative Programs.

Technical Library

Library Automation. Installation of the LS/2000 automated library system and its sub-systems, Serials Control (SC350) and Acquisitions (ACQ350), was completed in FY89. When fully implemented, the system will provide an automated catalog of the library collection, as well as circulation, acquisitions, and periodicals control functions. Training for all functions was accomplished in the third and fourth quarters. The final phase of the implementation consisted of linking, via barcode, the physical materials in the collection, such as books and periodicals, to the appropriate record for that item in the online database, and setting up individual check-in records for each periodical to provide an up-to-date record of each title held. At the close of FY89, approximately 38 percent of the book collection had been linked and the projected scheduled for the final implementation was:

November 1989	Online catalog available for public use.
December 1989	Circulation system operational.
January 1990	Periodicals control sub-system operational.
April 1990	Acquisitions sub-system operational.
October 1990	100 percent of collection linked to database.

Current Awareness Service. The library staff initiated and implemented a Current Awareness Service for senior HQ AMC directors. On a regular basis, the Tables of Contents of selected journals were distributed to them. The director chose relevant articles which the library then provided. Overall, the response was favorable, but especially encouraging was the positive response of the new HQ AMC Commanding General. The service appeared to meet an information need and will be continued.

AMC/ASA(I&L) Meeting

Throughout the year periodic meetings were scheduled between the Commanding General, AMC and Mr. John Shannon, Assistant Secretary of the Army for Installations and Logistics, to discuss items of joint interest. Due to scheduling conflicts, only two breakfast meetings were held in FY89. The first meeting was on 26 October 1988, and the second was on 31 January 1989. Some of the topics recommended for discussion at these meetings were Base Closures and Realignments, Relocation of AMC Facility to Fort

Belvoir, funding issues, hazardous waste and environmental issues, and productivity initiatives. Meetings between the Commander, AMC and Mr. Shannon, who later became the Under Secretary of the Army, will continue to be scheduled during FY90.

Vice Chief of Staff of the Army Visit to AMC

GEN Robert RisCassi, Vice Chief of Staff of the Army (VCSA) visited HQ AMC on 3 May 1989 to gather information on AMC's efforts to support the soldier. The scheduled events included:

- * Displays prepared by Natick R&D Center on their efforts to support Clothing and Individual Equipment, Shelter/Airdrop Developments, and Ration and Food Service Equipment.

- * A briefing by LTC Allen L. Germain, Commander of Longhorn Army Ammunition Plant, on the responsibilities of an ammunition plant commander.

- * A presentation by CPT Ralph G. Hay, assigned to Harry Diamond Laboratories, regarding the contributions of a PhD junior officer to Army research programs.

- * A visit to DESCOM, Aberdeen Proving Ground, Maryland, AMC-Europe, and AMC-Far East through the use of the video teleconference system.

Commanders' Conferences

U.S. Army Commanders' Conferences. Three Army Commanders' Conferences (ACC) were scheduled during FY89. The Fall ACC, 20-22 October 1988, and the Summer ACC, 6-8 August 1989, were convened as scheduled. The Spring ACC was cancelled due to scheduling difficulties, however a mini-conference with the four star commanders did convene to discuss FY90 programs. The purpose of the ACC was to provide commanders information on current Army programs and to promote discussion on items of interest or concern. In addition, each MACOM commander had the opportunity to provide attendees information on the actions ongoing within his command.

The Fall ACC was held at the Pentagon. Issues discussed by the Commanding General, AMC included Armor Anti-Armor, Environmental Indictments at Aberdeen Proving Ground, the INF treaty, inadequate resourcing of Army facilities appropriations, the impact of total package fielding operation and maintenance shortfalls, security assistance, AMC's role in foreign military sales, logistics modernization, and quality of officers.

Attendees at the Summer ACC were the four star commanders. The conference was held at the Belmont Conference Center in Elkridge, Maryland. Spouses were invited to attend and had a separate formal agenda. The focus of the ACC was on the implications of maintaining essential Army capabilities to meet present challenges and to shape the Army for the foreseeable future. Questions considered included:

- * Should there be changes in strategic roles or general characteristics of fielded forces?
- * Should there be a shift in the way we characterize threats and challenges to U.S. interests?
- * Should we change the way we configure our forces (including support forces and systems) to meet strategic roles and challenges?
- * What modifications to Army programs and budget are appropriate as discussion begins on the above three questions?

AMC Commanders' Conferences. An AMC Commanders' Conference (AMCCC) was normally scheduled subsequent to each Army Commanders' Conference. In FY89 the Fall AMCCC was held on 7-8 December 1988, the Spring AMCCC was held 22-23 March 1989, and the Summer AMCCC was held 16-17 August 1989.

The Fall AMCCC was hosted by CECOM at Fort Monmouth, New Jersey. The agenda included time for each commander to identify and discuss the challenges facing their commands in 1989. MG Charles E. Dominy, HQDA Congressional Liaison, and MG William H. Reno, HQDA Program Analysis and Evaluation, were guest speakers discussing matters of pertinence to their offices and AMC. An invitation to visit AMC activities was extended to both as a means of becoming better acquainted with the mission and requirements of AMC.

The Spring AMCCC was conducted at HQ AMC. MAJ Bischoff, staff officer with DLA, briefed the commanders on the mission of DLA. MG Charles R. Henry, DLA, and nine members of his staff were present during the briefing to answer any questions. A briefing on the Concept Based Requirements System/Field Long Range Research Development and Acquisition Plan was given by MG David M. Maddox, HQ TRADOC. During the working lunch on 23 March, BG Peter D. Hidalgo, Commander, CRDEC, spoke on the trial of the three APG/CRDEC employees and the establishment of the Army focal point for Chemical Warfare/Nuclear, Biological and Chemical (CW/NBC) defense RDA matters.

The Summer AMCCC was hosted by the Systems Integration and Management Activity (SIMA), St. Louis, Missouri. This was the first time that a Separate Reporting Activity had hosted the conference. The theme for the conference was Artificial Intelligence/Expert Systems. BG Kahla, HQ Army and Air Force Exchange Service (AAFES) Commander, gave a presentation on AAFES operations. The guest speakers also included Dr. Davis, Massachusetts Institute of Technology, and COL Simpson, Defense Advanced Research Projects Agency.

In addition, a video Commanders' Conference was held on 26 October 1988. The Commanding General, AMC presented a debrief of the August 1988 Army Commanders' Conference. Each AMC commander was provided time to discuss significant topics or to raise issues. The Commanders of AMC-Europe and AMC-Far East were included in the video conference. Both commanders were invited to participate in all scheduled AMC Commanders' Conferences.

AMC/TRADOC Conference

On 16 December 1988 the Commander, AMC and the Commander, TRADOC met at HQ TRADOC, Fort Monroe, Virginia. The purpose of the meeting was to discuss one-on-one items of joint interest and/or concern. Agenda topics were submitted by HQ AMC and HQ TRADOC staff elements. An exchange of point papers on selected agenda topics occurred prior to the conference date.

TRADOC selected topics included Revised Concept Based Requirements System, Competitive Strategies Update, and Transition of the Howitzer Test Bed Program into the Advanced Field Artillery System-Advanced Technology Transition Demonstrator (AFAS-ATTD). AMC selected topics included Restructuring of the Materiel Acquisition Management Program, Acquisition Information Management Program, Mission Equipment Package Multi-Stage Improvement Program Upgrade, and Update on FY90/FY91 Major Budget Issues and the FY95-FY96 EPA submissions and alternative.

Director of Information Management

Mission and Organization

Prior to the Director of Information Management (DOIM) concept for information management, the Telecommunications Center (TCC) was designated U.S. Army Information Systems Command-Bush Hill Activity (USAISC-Bush Hill). Effective 2 October 1988, USAISC-Bush Hill was officially redesignated the U.S. Army Information Systems Command-Alexandria (USAISC-Alexandria). This change was implemented under the authority of Permanent Order 104-1, 6 September 1988, HQ USAISC, Ft. Huachuca, Arizona. During this fiscal year, DOIM was reorganized and realigned to improve customer service and support to HQ AMC personnel and tenant activities.

The mission of USAISA-Alexandria was to effectively utilize information processing resources from both USAISC-Alexandria and HQ AMC. It was responsible for managing, directing, coordinating, and integrating the Information Missions Area (IMA) disciplines of automation, communication, visual information, printing and publishing, and records management for HQ AMC and tenant organizations.

Effective 1 January 1989, an administrative office for the DOIM was established. Effective 1 June 1989, a reorganization of DOIM provided better support for HQ AMC and the tenant activities and precipitated a realignment of positions within DOIM. The Applications Division was created from existing authorized TDA spaces, and the Network Office was created by using overhires authorized by 7th Signal Command.

At the beginning of FY89, DOIM was authorized one military and 121 civilian spaces. Although it required an additional 20 civilian spaces to perform this mission, the actual strength was 102 civilians which included four overhires. By the end of the fiscal year, the actual strength was 101 civilians, five of which were civilian overhires.²³

The Information Center was reorganized in June 1989 to improve customer service and support to HQ AMC personnel and tenant activities. The Work Place Automation Branch became the Information Center and the Applications Branch moved to another division. Also in June 1989, the staff of the Information Center was increased from four to eleven. Two GS-11s were upgraded to GS-12s, and a position for an additional GS-12 was established. The chief's position was upgraded from GS-12 to GS-13 in September 1988, however it was not filled until August 1989. Six GS-11s and one secretary made up the balance of the staff. A personnel freeze had prevented the office from filling three GS-11 vacancies.

The Network Management Office (NMO) was created by DOIM in July 1989. The initial mission of NMO was to oversee and coordinate the de-installation and re-installation of HQ AMC's Local Area Network (LAN). The NMO provided an environment that would enable HQ AMC to communicate and operate a fully interoperable and integrated information network, transparently linking all levels of management and administration supporting the information area. The NMO also provided fault management, accounting management, configuration management, performance analysis, security, and resource management of the HQ AMC LAN.

The reorganization and realignment caused the following changes in key personnel:

Title/Incumbent

Incumbency

Director, USAISC-ALEXANDRIA

²³Information Systems Command - Alexandria Historical Submission, FY89. Hereafter, all information in this chapter is from this source unless otherwise indicated.

Mr. Robert D. Bolonde	1 Oct 88 - 19 Nov 88
Ms. Joyce R. Ruthven	20 Nov 88 - 17 Jul 89
Mr. Maurice B. Johnson	17 Jul 89 -
 Deputy Director	
Vacant	1 Sep 88 - 3 Jan 89
Mr. Robert D. Bolonde	3 Jan 89 - 30 Sep 89
 Chief, Information Center	
Mr. Robert Hoffa (Acting)	1 Jun 88 - 30 Jun 89
Ms. Eileen Howes	1 Jul 89 - 30 Sep 89
 Chief, Network Office	
Ms. Susan Maks	1 Jul 89 - 30 Sep 89
 Chief, Application Development Division	
Mr. Robert Hoffa (Acting)	1 Jun 89 - 1 Aug 89
Mr. Ed Goldstein	18 Aug 89 - 30 Sep 89
 Chief, Operations and Systems Integration Division	
Mr. Robert D. Bolonde	1 Jul 88 - 3 Jan 89
Mr. Roy Tillery	3 Jan 89 - 17 Mar 89
Mr. Thomas H. Dolan	17 Mar 89 - 30 Sep 89
 Chief, Resource Management, Plans and Logistics Division	
Ms. Linda L. Pierpoint (Acting)	23 May 88 - 13 Mar 89
Ms. Linda L. Pierpoint	13 Mar 89 - 30 Sep 89

Allotted resources received by DOIM for FY89 from P39 funds included \$2,094,000 reimbursed by HQ AMC, and \$7,986,000 directly funded by 7th SIG CMD.

System Integration Management Activity Databank

The DOIM Information Center worked with the SIMA at Letterkenny Army Depot, Pennsylvania to get AMC users connected to their database. The Information Center assisted SIMA in connecting sixteen personal computers to the AMC Private Branch Exchange (PACX). The Information Center also assisted SIMA in preparing the PACX for a protocol converter which was used to make the connection faster and more efficient. This replaced the dialup 4800 baud modems and Defense Data Network (DDN) access to the databank.

Video Teleconferences

This fiscal year showed a 20 percent increase in the number of conferences, from 1,520 to 1,831. A new computer based scheduling system was implemented to permit major subordinate commands to schedule their own calls. Savings of from \$10,000 to \$40,000 per MSC resulted from reduced TDY and travel costs.

The Video Enhance Users System (VENUS) network installed five new studios, bringing the total to 15 studios in the AMC VENUS network. Holiday visits to AMC family members were offered via television. This effort was combined with networks at HQDA, U.S. Forces Command (FORSCOM), U.S. Air Force Logistics Command (AFLC), Strategic Defense Initiative Organization (SDIO), and U.S. Naval

Air Command (NAVAIR) to give employees a chance to talk to relatives in over 50 studios located in more than 20 states.

HQ AMC Automation Support

The DOIM assumed responsibility in FY89 for budgetary planning of HQ AMC work-place automation requirements. This was the first step taken by DOIM towards assuming full management control of HQ Information Mission Area requirements starting in FY90.

In conjunction with the 4th quarter Budget Program Resource Review (BPRR) process and Automation Prioritization (1-N) reviews, DOIM issued guidance governing the submission of HQ automation requirements for FY90-FY97. All activity submissions were reviewed by the DOIM for compliance with the HQ AMC Information Management Plan. Requirements were subsequently ranked and submitted for consideration by the Senior and Executive Resources Action Committees. The approved FY90 Automation Program issued by the committees provided the basis for DOIM to manage FY90 HQ AMC requirements.

Secure Telephone Units

All of the 170 secure telephone units (STU II's) in the headquarters were replaced with STU III's. Approximately 90 percent of all STU III instruments had been placed into the property book channels during the Controlled COMSEC Item (CCI) transition period established by the Army Central COMSEC Office of Record (ACCOR) at Ft Huachuca. Six mobile cellular STU III's were transferred to selected MSCs at the request of the DCS for Information Management.

Career Interns

Three Automated Data Processing (ADP) interns were assigned to the Information Center in May 1989 for on-the-job training. The interns will be rotated throughout DOIM during their two-year tenure.

Automation Working Group

The original automation working group consisted of those DCS's with delegated authority to approve the acquisition of ADP resources. The group was expanded to include representation from all HQ AMC organizational elements that were interested in the acquisition of ADP resources.

The establishment of IMAs and DOIM created the requirement to change the structure of the Working Group, to include the establishment of an Information Management Officer (IMO) within each organization. The IMOs attended meetings and were able to make decisions relative to their organizational requirements for IMA resources.

In February 1989 the Automation Working Group was renamed the Information Management Committee. This redesignation was accomplished since all issues that were discussed by the group pertained to IMA. In addition to automation, IMA issues also involved communications, printing and publications, and records management.

Approval and Resource Tracking System

The Approval and Resource Tracking System (ARTS) had been developed to manage and track the status of HQ AMC user requirements from definition in an Information Management Plan (IMP) initiative through the submission of procurement documentation and contract award. A query capability will allow HQ AMC users to ascertain the status of their requirement at any point in the process. The functional

description, system design specifications and specifications for the tracking system have been completed. Population of the data base will take place by 4th Quarter FY 90.

Conversion of Paper Records to Microfiche

Back issues of *AMC News* were converted to microfiche during FY89. These issues were in various stages of deterioration, and HQ AMC was faced with losing a valuable and significant source of historical documentation. Microfiching of paper records had shown that storage required to maintain records would be reduced by less than one-half. The objective was to continue the identification of alternate means to reduce the storage of paper records in the headquarters.

Modern Army Recordkeeping System

Implementation of the Modern Army Recordkeeping System (MARKS) Program, which was introduced Army-wide on 1 January 1987, was a priority for all staff offices within HQ AMC. The MARKS program manager promoted full compliance with AR 25-400-2 by providing leadership and an aggressive training program. With the impending move to Fort Belvoir, Virginia, greater emphasis was placed on retiring records to the Washington National Record Center in order to reduce the amount of file cabinet storage in the new command facility.

HQ AMC Information Plan

Published on 23 June 1989, the Information Plan addressed IMA initiatives which included automation, communications, printing and publications, visual information, and records management. The primary purpose of the Information Plan was to express the HQ AMC IMA strategy for the immediate situations and to establish a base upon which future plans may be developed. The Information Plan outlined the strategy for obtaining the tools to facilitate the conduct and management of programs that supported the mission as well as enhance daily operations at HQ AMC.

HQ AMC Network Management

Network Management Office. The Hughes LAN System was awarded a contract on 29 September 1989 to correct deficiencies in the installed cable plant. The original LAN installed in the headquarters building used a non-plenum approved cable backbone which did not meet the fire safety code of the City of Alexandria. The non-plenum cable was scheduled to be removed by December 1989, and a new plenum approved cable was to be installed and operational by January 1990.

Information Center. In July 1989 the Information Center took over maintenance calls for HQ AMC. The center also initiated biweekly training classes on Enable 2.15 (word processing) for HQ AMC employees. The classes gave users informal and individualized instruction in Enable. Two users groups were established, one for ADP System Administrators and one for ADP users in AMC. Both groups meet quarterly and were based on user interests and requirements in the ADP field. Vendors and government employees participate in the presentation of many topics.

Telecommunications Center (TCC)

DCT 9000 ATE. The DCT 9000 ATE was picked up by UNISYS in late January 1989. This was an on-line system which was used to process narrative and data traffic.

Information Systems Engineering Command - Continental United States. Information Systems Engineering Command - Continental United States (ISEC-CONUS) and CPT Inc., installed the Bill of Materiel (BOM) and CPT equipment. The two original terminal line controls (TLCs) were faulty and had

to be replaced. CPT Inc. originally attempted to charge \$700,000 for the new TLCs. Their corporate headquarters had to be contacted to request a resolution of this matter with no charge to this office. The system was still not operational due to suspected wiring problems. CPT claimed it was installed improperly and ISEC CONUS claimed it was installed according to specifications. The DOIM was attempting to resolve this issue.

Exercises. The TCC Branch participated in one major exercise and several smaller ones. Concurrent with the major exercise was a real world crisis, the earthquake in San Francisco. The AMC Operations Center activated an earthquake cell and its primary input for information was through the TCC.

Genser TCC and Special Security Office (SSO) TCC. A technical evaluation was performed on the Genser TCC and the SSO TCC by an evaluation team from Fort Huachuca, Arizona. The team determined that both facilities were providing satisfactory service to their customers.

Automation of Documents. The TCC Branch was provided stand-alone PCs which enable automation of the TCC subject guide, address indicator group (AIG) files, unclassified portions of the COMSEC account and property hand receipt holdings.

Messages and Automation Voice Network Calls. During FY89, 21,852 outgoing and 172,332 incoming messages were processed in the Genser TCC, and 4,800 outgoing and 45,600 incoming messages were processed in the SSO TCC. There were 6,780 autovon calls processed on the Private Branch Exchange (PACX). The Telecommunications Branch processed all incoming and outgoing messages for Vint Hills Farm Station during their three week outage due to an upgrade of equipment in July and August 1989.

Reconciliation. A reconciliation by Fort Huachuca of the COMSEC account and its transactions during FY89 revealed no discrepancies and 100 percent accountability.

Assumption of Communications Guard. The communications guard was assumed during FY89 for HQ DLA from 2200 hours to 0500 hours daily and on weekends during their closure.

Secure Host Room. Due to modernization and upgrading, the TCC secure equipment room was identified as the secure host room.

Postal Service

Conversion to Commercial Mail Postage. Effective 5 July 1989, the mailroom converted from the Official Mail System to a commercial mail postage. The mailroom operated on a pay-as-you-go (prepaid) system and discontinued the use of Army-wide permits (G-5 and Business Reply Mail 12062). All envelopes preprinted with the words "Penalty for Private Use" were no longer authorized for use unless the phrase was deleted.

Postage Expenditure Target. The FY89 postage expenditure target for the mailroom was \$210,000. The actual expenditure was \$210,806, the overage was attributed to the addition of Air Force Information for Industry Office as a tenant unit.

Graphics

Presentations. The Graphics Branch produced 1360 presentation projects totalling 13,637 individual units of work. These presentations included projects for the 27th AMC Anniversary Picnic and the 1989 AMC Fall Ball.

Contracting. Contracting was held to 181 outside graphic work requests and 32 photograph requirements which totaled \$81,919. This was down from \$92,810 in 1988.

PC Electrahome Projection Equipment. The Audiovisual Section was responsible for installation and maintenance of special PC Electrahome projection equipment which was used during 1989 for the Commanding General Briefing Room.

Video Tape Work Requests. Audiovisual personnel dubbed 410 video tape work requests which totalled 27,355 minutes, and 20 audio tape work orders with a total of 1800 minutes.

Printing Service

Reproduction. The Printing Branch reproduced 3,315 jobs (206,642 originals, 7,670,201 impressions) compared to 3,714 jobs (155,966 originals, 6,699,268 impressions) in 1988. Approximately \$300,000 was saved on contract printing.

Transfer of Copying Program. The Copying Program was transferred internally from the Resource Management Branch to the Operations and Systems Integration Division in May 1989. The program had an annual budget of \$700,000.

Publications

Organizational Chart. The organizational chart was prepared using an automated system, as were AMC forms and art work for various AMC publications. In-house generation of this camera-ready art work had proven to be cost effective, and was an improvement over past systems where forms were designed and made camera ready through the Government Printing Office.

AMC Pamphlet 25-2. A database for the index of blank forms (AMC Pamphlet 25-2) was created and will be used to produce more concise publications in the future. A new forms manager was selected and assigned to that position in August 1989.

Updated DA Pamphlet 25-33. The updated DA Pamphlet 25-33, *Standard Army Publications System* (STAR PUBS), was received in the Publications Branch during 1989. This directive was further simplified by the use of only two forms, DA Form 12-R and DA Form 99-R. These changes were implemented by stockroom and distribution personnel.

ADPE Maintenance Contracts

The Logistics Branch initiated a review of all ADPE maintenance contracts to consolidate requirements and validate the existing coverage. A review and validation of previous and FY89 requirements led to a significant decrease in the number of multi-user systems that were maintained, allowing the reallocation of funds to other maintenance areas.

Broadband Cable Network

The Broadband Cable Network (BCN) will provide the capability to better utilize information resources, and alleviate safety and fire hazards which had been cited by the local fire marshal. This project will be completed in phases. Phase I will provide for the correction of existing deficiencies, and the certification and testing of the network by bringing a limited number of users into the network. Phase II will provide for the installation of the BCN equipment in the functional areas as well as maintenance and support. There will be additional phases which will provide enhanced capabilities, in such areas as PC networking and video, to HQ AMC organizations.

Office of the Deputy Chief of Staff for Personnel

Organization

The DCS for Personnel was authorized a staff of 176. Heading the DCS was MG Albin G. Wheeler with George L. Jones as the Assistant DCS for Personnel.

The Community Morale Services Branch was reorganized in May 1989. The reorganization divided the branch into two sections, the Resource Management and Services Support Section and the Business Management and Community Recreation Section. The reorganization permitted greater flexibility in providing service to the MSCs and installations.²⁴

Position Management and Classification

Draft Position Classification Standards. A number of Office of Personnel Management (OPM) draft position-classification standards, grade-evaluation guides, and job-grading standards were reviewed, test-applied, and comments were provided through DA to OPM. The occupations covered included Communications Management (GS-391); "Accounting" (GS-510), Military Pay (GS-545); Test and Evaluation Engineering Work; Materials Examiner and Identifier (WG-6912), and Wage Supervisors.

Integrated Personnel Document. A proposal was developed for use as an integrated personnel document that would combine the job description, performance standards, knowledge, skills and abilities to perform the job. This proposal was distributed for review and comment within AMC. DA has expressed interest in testing such a concept and AMC has volunteered to conduct testing at one or more installations or commands.

Operations Research Analyst Standards Study. This study was conducted by the DCS for Program Analysis and Evaluation with funds provided by the Deputy Under Secretary of the Army for Operations Research. The Study was conducted under an agreement between the DA and OPM that authorized AMC to conduct this Federal Government-wide study. A special team of two operations research analysts and one personnel management specialist, based at Aberdeen Proving Ground, conducted the study under the direction of the DCS for Program Analysis and Evaluation. The DCS for Personnel provided advice during the course of the Study. A total of 686 operations research analysts, supervisors, managers, personnel specialists and employees in related occupations in 21 different Federal agencies were interviewed at 45 employing sites.

The President of the Operations Research Society of America, several staff members of the Rand Corporation and some faculty of the University of California (Berkeley and Los Angeles) were also interviewed. In addition, 850 questionnaires were sent to randomly selected operations research analysts throughout the Federal Government, of which about 25 percent were completed and returned. The Study was completed and delivered for review by the U.S. Total Army Personnel Command (PERSCOM) prior to its submission to OPM.

The proposed position classification standard contained a new occupational series definition, updated terminology, clearer distinctions from other occupations, and grade level criteria with an appendix for work illustrations for grades 11 through 14. This reflected Operations Research Analyst assignments the Study

²⁴DCS for Personnel Historical Submission, FY89. Hereafter, all information is from this source unless otherwise indicated.

team members found during their site visits. The proposed qualification standard recognized operations research analysis courses as qualifying and requires calculus.

Managing the Civilian Work Force to Budget

The test of managing the force to budget (MCB) was continued as part of the DA Civilian Personnel Modernization Project. The test began in FY88 and was originally scheduled to be in effect for two years. It was decided, because of problems in starting the test, to use FY88 as the base year and let the test be conducted during FY89 and FY90. The two AMC test sites were Natick Research, Development and Engineering Center and Red River Army Depot. HQ AMC conducted reviews at both Natick and Red River to determine if all procedures were in place to permit the test to be conducted properly. It was determined that both sites were operating the test correctly, although some recommendations were made to improve procedures.

DA decided that the test should be expanded for FY90 to include additional installations. AMC requested that the remainder of TROSCOM be included to put an entire MSC in the test. It was further requested and approved that Watervliet Arsenal, Combat Systems Test Activity, Seneca, Tobyhanna and Anniston Army Depots, and USASAC be included. As the fiscal year ended plans were being made to implement MCB throughout CONUS at the beginning of FY91.

Program Planning and Evaluation - Gateway 2000

The headquarters expected changes to its mission and organizational alignment as a result of the Defense Management Review initiative. Workforce 2000 studies suggested that there will be a scarcity of well-qualified/fully skilled candidates for entry level positions in the near future. Federal managers were be expected to become more attuned to identifying means of improving the "total quality" of their workforce by developing and undertaking employee-management outreach initiatives.

The personnel management program of the future will feature automated data systems and processes, and staff will be required to develop and utilize computerized/automated personnel management information systems. Personnel management staff will be expected to give heightened emphasis to customer service. These and other employment issues will impact on AMC's Civilian Personnel Offices (CPOs), and should serve as a frame of reference from which CPOs can examine the status of their individual programs, identify the need for new initiatives, and develop a proactive management consultant posture.

The HQ AMC Civilian Personnel Division (CPD) staff made a series of planned staff assistance visits to every AMC CPO and servicing CPO to identify ways to enhance and expand the AMC CPO community's role as a management advisor and consultant. Throughout the process, the objectives were to institutionalize personnel management improvement in CPOs, minimize and eliminate the development of systemic problems, establish and cultivate team work between CPD community and individual CPOs, and identify policy/program initiative needs. Efforts were made to strengthen the perception of proactive rather than reactive upgraded CPO planned assistance visits; to improve trends of customer service satisfaction "feedback" and the information clearinghouse network between CPD and CPOs; and to enhance the development of CPO and CPD staffs.

HQ AMC forwarded the Concept Plan on the demonstration project, Gateway 2000, through HQDA to OPM for approval. Gateway 2000 was developed jointly by TROSCOM and the U.S. Army Aviation Systems Command (AVSCOM) in St. Louis, Missouri as a result of the Packard Commission Study. Demonstration projects were authorized under the Civil Service Reform Act (1978) to test alternative personnel systems for improving personnel management. Gateway 2000 proposed interventions included:

- * New classification and compensation system (included pay banding and career paths).

- * Performance evaluation and employee reorganization (proposes two rating levels - acceptable and unacceptable, with bonus pay for performance).

- * Training and employee development (establishment of a degree tuition program and mandated 40 hours training per employee per year).

Civilian Resource Conservation Program

The reduction of job related injury and illness claims, human suffering, lost production, and costs associated with the worker's compensation program is one of the command's highest priorities. HQ AMC had been active for the past several years in administering an aggressive proactive workers' compensation cost reduction program command-wide. The following provides an overview of some of the major actions taken during FY89:

- * Announced FY89-FY93 DA 2 percent cost reduction goals involving Safety, Civilian Personnel, Medical Services, and Resource Management in August 1988.

- * Conducted FY89 command-wide Federal Employees Compensation Act (FECA) workshop in February 1989 which was attended by 65 representatives of Civilian Personnel, Safety, Medical Services, and Resource Management.

- * Briefed AMC Recruitment and Placement Branch Chiefs in February 1989 on DA Civilian Resource Conservation Program (CRCP) Goals, reduction efforts, and required assistance.

- * Issued AMC Commanding General policy letter to Commanders in support of CRCP.

- * Automated program established to monitor quarterly progress at installations, and to provide the data to MSCs and installations.

Efforts in this program were intensified, and during the next fiscal year the DCS for Personnel planned to provide the installations with several directives, interpretations of regulations, and suggested actions. Additionally, the DCS for Personnel planned to schedule video conferences with MSCs and to continue to propose program and procedural changes to HQDA.

Base Realignments and Closures

The AMC civilian personnel community began planning early in 1989 to carry out the personnel actions associated with base realignments and closures mandated by PL 100-526. Eight AMC installations were affected: Fort Wingate Depot Activity, Navajo Depot Activity, Umatilla Depot Activity, Pueblo Depot Activity, Jefferson Proving Ground, Materiel Technology Laboratory, Lexington-Bluegrass Army Depot, and Alabama Army Ammunition Plant. An estimated 2,600 civilian positions will be affected (1,700 scheduled for transfer to other locations and 900 scheduled to be eliminated).

A variety of guidance and information on civilian personnel matters, for CPOs and the work force, was prepared and issued by AMC CPD. Field assistance visits were made to four of the affected installations during the year. Implementation plans developed by affected installations include a number of initiatives to provide placement assistance for employees adversely affected. The command's main objective was to minimize the need for involuntary separations.

HQ/Field Army Civilian Personnel System

On 29 April 1988, the Under Secretary of the Army selected the Air Force Personnel Data System-Civilian (PDS-C) as the Army Civilian Personnel System (ACPERS) in lieu of an Army contractually developed system. The decision was based on functional engineering and programmatic analysis and associated risks. Plans called for the system to be operated at the Air Force Computer Service Center located in San Antonio, Texas. The existing UNISYS 5000/70 CPU purchased for Office Automation will be used by the civilian personnel offices to operate ACPERS.

Effective 5 July 1989, the installation level ACPERS name was changed to the Field Army Civilian Personnel System (Field ACPERS). The HQDA system was changed to Headquarters Army Civilian Personnel System (HQ ACPERS). The installation level civilian personnel offices' connectivity was installed directly into the Air Force Computer Service Center in San Antonio.

HQ ACPERS operated from the Hoffman Building in Alexandria, Virginia. HQ ACPERS was phased in by functional modules (i.e., Career Management; Labor Relations; USACARA; and Program Evaluation), with expected completion in October 1990.

Corpus Christi Army Depot was the Pre-Deployment Site and the Software Acceptance Test (SAT) site. The Pre-Deployment Site test and the SAT was conducted from 15 November 1989 to 17 February 1989 at Corpus Christi Army Depot. Letterkenny Army Depot was the Lead Deployment Test site. The Lead Deployment Test was conducted from 27 February to 3 March 1989. Letterkenny Army Depot was also the Nonappropriated Fund (NAF) Test site. The NAF test was conducted from 26-30 June 1989.

As of 31 December 1989, AMC had trained and deployed approximately 25 of the original 33 operating civilian personnel offices using Field ACPERS. Four additional sites were identified as satellites to utilize this system. HQ AMC and its MSCs were identified to use HQ ACPERS. Connectivity, training, and deployment was set to be completed during 1990.

PROUD EAGLE 90

Exercise PROUD EAGLE 90 (PE90) was conducted from 16 October to 3 November 1989. The Civilian Personnel community had extensive play prior to and during the exercise. The Civilian Personnel Objectives were to evaluate civilian mobilization planning, impact of military callup, procedures concerning key/emergency essential employees, utilization of military retirees, and utilization of surplus civilian employees. Data to support these objectives was obtained through three methods: Pre-exercise data collection on nine subobjectives, Exercise play, and Adjunct exercise "Depot Surge." In addition, five AMC civilian personnel offices were identified to participate in the OSD Recruiting Area Staffing Committee Play (RASC).

The HQDA analysis of the data submitted from the pre-exercise data collection effort indicated inconsistent application of mobilization policies and procedures concerning the civilian work force into the total force planning and inconsistent application of policies and procedures related to the civilian mobilization manpower requirements determination process. The following issues were submitted as observation reports by HQ AMC regarding problems identified during the exercise play:

- * Lack of knowledge of MOBAPRINT (Mobilization Army Program for Individual Training);
- * Inconsistent and/or incomplete information regarding Emergency Essential Civilians;
- * Unrealistic workweek hours and working condition assumptions;

- * Recruiting Area Staffing Committee's lack of direction and control at all levels;
- * Hampering of reemployment of retired civilians because of reduction in retirement pay;
- * Concern that contractors would not be able to meet contract requirements because of the shortage of skilled labor, and the problem of identifying a substitute contractor in case of primary contractor default;
- * Lack of data on individuals returning from overseas to fill critical CONUS positions.

The adjunct exercise "Depot Surge" was held at Tooele Army Depot to evaluate the depots ability to hire retired civilian employees to help meet surge production requirements. The exercise was a success in both production and reemployment of retired civilian employees.

The RASC play participants came from White Sands Missile Range, Army Research Office, Sharp Army Depot, CECOM, and the Army Research and Development Center. CECOM was the lead activity for the northern New Jersey area. All offices coordinated their recruiting requirements with the local employment offices and the local OPM. Data on these offices to fill those requirements was to be forwarded to HQDA by the end of December 1989.

Career Management and Development

Leadership Training. There was a significant increase in leadership training during FY89. Approximately 600 first year interns completed the Intern Leadership Course; 70 managers completed the Organizational Leadership for Executives program; over 100 managers completed a managerial program at one of the OPM Executive Seminar Centers; and several activities had teams trained to conduct the Leadership, Education and Development program for first line supervisors. Two new programs were implemented in FY89, Operations Research Systems Analyst (ORSA) Advanced Study Program and the Ammunition Exchange Program. DA centrally funded the ORSA Program, while AMC used its own funds to support the Ammunition Program.

Training Funds. There was a severe cut in training funds during the fiscal year. DA funds were not allocated to support executive/managerial training, and funds to support the Facilities Engineer Apprentice Program (FEAP) were frozen, resulting in no new FEAP hires during most of the fiscal year (some additional FEAPs were hired in September 1989). The number of long term training opportunities supported by DA funds were further reduced.

While the DA central funds were curtailed, AMC activities used mission funds to continue providing essential managerial training. Innovative approaches to the funding shortage included increased on-site training in lieu of training requiring TDY, sharing resources with other Army/DOD activities in the local PLATO computer-based-instruction network, and increased use of DA centrally supported programs such as Organizational Leadership for Executives, Intern Leadership Course, and Army Management Staff College.

Intern Management. The Intern Management Branch, Career Management and Development Office of the Civilian Personnel Division was responsible for oversight of AMC's centralized intern recruitment program. This command's FY89 allocation totalled 1,516 spaces in 23 career programs. DA resourcing of \$38 million covered intern salaries, training and PCS costs. Active and aggressive recruiting through use of college campus visits and other sources resulted in FY89 ending with 1,516 interns on-board and a total obligation of all allocated funding.

The recruitment of AMC interns was performed by AMC's Field Placement Offices (FPOs) located in Sacramento, California, Atlanta, Georgia, and Philadelphia, Pennsylvania. To ensure maximum cost

effectiveness, the area office located in Philadelphia was merged with the Sacramento office in late FY89 and the functions were transferred to the Sacramento FPO.

Logistics and Acquisition Management Program (LOGAMP)

On 8 Feb 1989, the Under Secretary of the Army designated the acquisition portion of the LOGAMP Competitive Development Group, as well as the Materiel Acquisition Management Program (Military), as the basis, in part, for establishing a pool of qualified acquisition managers to fill critical acquisition positions in Army. In addition, the Under Secretary announced the expansion of LOGAMP to include the following career programs: Communications, Automatic Data Processing, Engineers and Scientists (Resources and Construction) and Comptroller.

The Defense Management Review (DMR) and the Army Management Review (AMR) had further stressed the importance of a highly trained acquisition work force with the establishment of the Army Acquisition Corps (AAC). The objective of this segment of LOGAMP was to provide a structured systematic program for the selection, development, training and retention of selected acquisition managers to occupy critical positions in Program Executive Offices, Program, Project and Product Management Offices, matrix support command organizations, procurement command headquarters, and Headquarters, Department of the Army.

The implementation of the AAC did not, in any way, diminish the original charter of LOGAMP to provide structured and controlled developmental assignments and technical and managerial training for high potential civilians to meet Army's requirement for effective acquisition and logistics managers. LOGAMP participants not included in the AAC will continue to receive training and developmental assignments consistent with program objectives to produce multifunctional logistics and acquisition managers.

Exercise Certain Sage - Military Retiree Recall Program

The purpose of the military retiree recall program was to provide the Army with pre-trained manpower to augment the force during wartime. The recall and use of retirees was part of the answer to the Army's manpower shortage in the event of mobilization. Since 1981, considerable attention has been directed toward improving the overall Army strength, especially in the area of pre-trained manpower. The plan to recall retirees was known as the Retiree Mobilization Preassignment and Recall Program and was managed by the U.S. Army Reserve Personnel Center in St Louis, Missouri.

The benefits of recalling retirees included more efficient use of pretrained manpower, faster buildup of forces, the release of active component personnel for reassignment and/or deployment and advance communications between the mobilization station commanders and their mobilization personnel. Preassignment will help to simplify and expedite retiree recall during a period of anticipated communications overload.

The merits and effectiveness of the program were evaluated annually by conducting recall exercises at various pre-selected installations, designated as Certain Sage. The objectives of the exercise were to test and evaluate the installation management of the retiree pre-assignment and recall programs, in/out processing procedures, retiree medical/dental fitness, and retiree job proficiency.

Exercise Certain Sage was conducted at Aberdeen Proving Grounds during the period 23-25 October 1989. A total of 37 retirees were expected to participate. The overall consensus of the recall exercise was that:

- * Retirees in most cases possessed the necessary skills to perform their functions.

- * Minor refresher training would be required.
- * Orientation needed for computer training and new equipment training.
- * Medical evaluations revealed that 13 out of 37 retirees were not considered physically qualified. However, it can be assumed that the medical standards would be lowered for retirees because they would not normally be utilized as deployable assets.

Junior Officer Professional Development Program

The purpose of the Junior Officer Professional Development Program was to establish a systemic and structured environment to stimulate and teach junior officers (lieutenants and captains under five years). The learning tools included the Military Qualification Standards (MQS), exposure to controlled training, and access to the required reading list (published on a quarterly basis). Other areas of the program were to instill personal growth, assign mentors, provide assignments on a rotational basis, place junior officers in supervisory positions and fully utilize and develop their skills.

The MACOM's role in the program was to monitor its implementation throughout the command and to ensure that guidelines, as established in AMC Pamphlet 350-1, were followed. Periodically, information and guidance was forwarded to the field to energize the program. Productivity within the command will be enhanced by carefully managing this program at all levels of leadership. Ultimately, the overall success of the program will be measured by the support and energetic application given by all mentors, supervisors, and commanders.

A built-in reporting requirement directed all major subordinate commanders to submit semi-annual status reports to the headquarters which outlined progress being made within their respective programs. The following information represented the status report covering the period 1 January - 30 June 1989:

- * 227 junior officers were participating in the program.
- * 100 percent of officers had mentor assignments.
- * 58 percent of officers were in supervisory positions.
- * 94.5 percent of officers had MQS manuals.
- * 30 percent of officers had received a developmental assignment to broaden their skills.
- * 63 officers had received "muddy boots" type training.

Reports received from the field indicated wide support for the program. Commanders formed professional development committees as required by AMC Pamphlet 350-1 and managed their programs to ensure that all aspects of the program were being fully implemented. All junior officers were aware of this program, fully supported its merits, and recognized the efforts being made to provide opportunities for their professional and personal growth.

Individual Weapons Training and Qualification

The AMC Policy regarding individual weapons qualification had been reinforced for 1989 based on guidance contained in DA PAM 350-38, *Standards in Weapons Training*, and AR 350-41, *Army Forces Training*. AMC personnel assigned to TOE/MTOE organizations and assigned an individual weapon were required to qualify according to the standards outlined in DA PAM 350-38. AMC personnel assigned to

TDA organizations and assigned or designated individual weapons had to meet the qualification requirements. AMC personnel in a TDA organization not assigned individual weapons were encouraged to use local resources in order to participate in weapons training and qualification. Commanders continued to develop their weapons qualification/familiarization program for each soldier in their command, including those without assigned weapons.

Multipurpose Arcade Combat Simulator

The Multipurpose Arcade Combat Simulator (MACS) was a video training device designed to assist in training marksmanship skills and familiarizing the individual soldier with the M16A1 rifle. In November 1989 the MACS was purchased for HQ AMC, ordered from the Fort Benning Training Support Center. MACS was scheduled to arrive in February 1990, with a location and training program of instruction prepared prior to its arrival. This action was intended to aid in conserving training resources and keeping the individual soldier familiarized with his weapon.

Officer Distribution Plan

PERSCOM released the FY90 Officer Distribution Plan (ODP) on 15 September 1989. Total ODP support for AMC was 2,327 against 2,566 authorizations (90.7 percent). AMC's ODP support levels reflected Army-wide shortages of field grade officers, especially lieutenant colonels and majors. Compared to the FY89 ODP, overall FY90 ODP support was increased by 103 officers, an increase from 87 to 91 percent.

Shortages for AMC were at the major and lieutenant colonel levels, with 88 percent and 71 percent respectively. Especially hard hit branches (BR) and Functional Areas (FA) included BR 25 (Signal), BR 15 (Aviation), BR 31 (Military Police), FA 51 (Research and Development), and BR 91 (Ordnance).

Adjutant General/Community Activities

Community Facility Construction. AMC committed considerable effort and resources to the morale, welfare and recreation (MWR), non-appropriated fund (NAF) and military construction, Army (MCA) community construction program. The Commanding General commitment to fund 10 percent of the MCA program for Community and Soldier Facilities was continued. The FY89 Construction Program approved by Congress included four NAF projects for \$6.3 million and one MCA community project for \$1 million.

Pay Telephone Profits. Consolidating installation pay telephone profits from AAFES at HQ AMC continued to allow a major concentration of resources to projects that otherwise would not have been funded. The command was also committed to these projects which were ranked high on the list of priority needs of installations throughout AMC. The FY90 committee reviewed and evaluated installation requests for pay telephone money. Approximately \$800,000 will be distributed to selected installations throughout the year.

Market Support. The Community Morale Service Branch hired a marketing specialist to provide marketing support to MSCs and installations. This specialist will provide management assistance in the marketing area (e.g., need assessments, surveys and focus group discussions).

Processing OCONUS Travel Requests. The Travel Branch processed 3,948 requests for OCONUS TDY travel from HQ AMC, the major subordinate commands, and separate installations and activities. A study to automate the processing of OCONUS travel requests throughout the command progressed. The Planning Research Corporation (PRC) delivered the specifications for the OCONUS Travel Tracking System (OTRVTR) in March 1989. The final stage of the OTRVTR system was underway with delivery anticipated in February 1990.

Requirements for official local transportation were met by authorizing the use of privately owned vehicles when it was deemed more advantageous to the Government. Bus tickets and subway passes were furnished to personnel when commercial transportation was available for the conduct of official business within the local area. Requests for priority military air transportation were evaluated and scheduled through Centralized Army Aviation Support Office.

Army Logistics Management College. Mr. James B. Oerding, Director, U.S. Army Management Engineering College, Rock Island, Illinois, assumed his duties 30 July 1989. Dr. John F. McAreavy had served as director from 9 November 1980 until his retirement on 31 December 1988.

Ribbon cutting and dedication of the new wing of Bunker Hall at the U.S. Army Logistics Management College (ALMC), Fort Lee, Virginia, was held on 21 April 1989 with LTG Fred Hissong, Jr., DCG for Materiel Readiness performing the ceremony. Elements of ALMC began to move incrementally from wooden buildings to the new wing on 5 July 1989, completing the movement in August 1989.

The new Butler building housed two additional Satellite Education Network (SEN) television studios completed in July 1989. LTG William G. T. Tuttle, Jr., Army Logistics Center and Fort Lee, Virginia performed the ribbon cutting ceremony in September 1989. The two studios will become operational in October 1989.

Mr. Stanley R. Jankowski, Dean of ALMC School of Military Packaging Technology (SMPT) at Aberdeen Proving Ground, Maryland, retired 29 December 1989 after 42 years of government service. The ALMC Commandant presented him with an award for Meritorious Civilian Service, a Lifetime Honorary Faculty Membership Certificate and a College Medallion. Mr. Charles P. Hutter was being detailed as Acting Dean, SMPT for 120 days.

Adopt-A-School. AMC continued to lead the Army in supporting HQDA's Adopt-A-School program. Thirty-six AMC installations provided voluntary support to 62 different schools and/or school systems. Additionally, 31 AMC employees provided volunteer support for HQ AMC's adopted school, George Washington Junior High School.

Educational Support for Soldiers. The Army Continuing Education System provided educational support to soldiers, reservists and family members at 11 AMC Army Education Centers (AECs). Soldiers enrolled in 6,519 college courses (a seven percent increase over FY88); 2,514 College level tests were administered (a one percent decrease from FY88); and 58,912 educational/vocational counseling sessions were conducted (a 19 percent increase over FY88). Additionally, 148 associate, 105 baccalaureate and 83 graduate degrees were earned by soldiers through college programs offered at AMC installations serviced by AMC AECs. AMC Education Services Officers were able to establish cost control measures that resulted in decreases in the cost per enrollment for lower and upper level college courses. They were also able to assist soldiers and family members to obtain \$101,000 in grants that helped pay for college courses.

AMC Health Promotion Program. The HQ AMC Health Promotion Program contract was competitively renewed for a 4.5 year period. The contract included the continuation of the program and the completion of the Cost/Benefit study started in 1985 to assess the return on investment of a civilian work place health/fitness program. The analysis will be completed in two stages. Data collected from October 1985 through March 1989 will be analyzed first with the report due September 1991. The longitudinal and confirming data being collected from March 1989 through March 1993 will be reported on by October 1993. The implications of this study are far-reaching. The results will be used by OPM in its review of policies governing the use of duty time by Federal employees for health/fitness programs.

Top Secret Repository. On 28 November 1989, CPT Yvonne D. B. Burch, accompanied by SSGs S. D. Evans, Carroll B. L. Buchanan, and SGT Albert Tubbs, inspected the Top Secret Repository. No discrepancies were noted during the inspection, which is impressive, since an excess of 16,000 NATO classified documents were processed by three assigned subregistry personnel in addition to their U.S. classified workload. The logging, controlling, inventory, and accountability for NATO documents was the most efficient observed by this inspector of DOD major commands and agencies worldwide.

Army Community Service and Family Advocacy Program. In FY89, ACS filled two slots on the HQ AMC TDA; a Family Advocacy Program (FAP) Manager and a Program Analyst. This was the first time HQ AMC had hired for these positions. This increase in manpower resulted in more effective tracking of Office of the Secretary of Defense FAP funding. AMC obtained a 100 percent obligation rate of OSD FAP funding in FY89. The lack of installation FAP treatment resources for the effective implementation of the FAP at many AMC installation locations was identified and reported to Health Service Command (HSC), Department of the Army, and the Surgeon General of the Army by the HQ AMC FAP manager. This resulted in the Department of the Army listing FAP treatment shortfall as the number one issue to be corrected.

Alcohol and Drug Abuse Prevention and Control Program. The Alcohol and Drug Abuse Prevention and Control Program (ADAPCP) did not have the internal capability to provide treatment (clinical) services to military and civilian personnel, except at Fort Monmouth, Aberdeen Proving Ground, and Redstone Arsenal. In early 1985, AMC staff initiated coordination with HSC for the provision of clinical staff to AMC installations. By 1986, AMC and HSC agreed that approximately 25 AMC installations needed this support. HSC implemented a Program Development Increment Package (PDIP) to obtain funds for contracts to support the AMC shortfall. The PDIP was approved for FY88, but the funds were used to pay for other medical care costs.

In January 1989, HSC decided that a better way to support AMC needs was to provide overhire requirements to the medical treatment facilities supporting AMC installations to overhire ADAPCP counselors. At this point, AMC requested and obtained 33 positions for all the installation ADAPCPs and spent several months working out a memorandum of understanding with HSC to address issues such as hire and fire authority, supervision of overhire staff, workload accountability, and future assessment of the program. Because the counselors needed to be credentialed by the hospitals as independent practitioners, specific job descriptions and procedures for credentials reviews had to be established. This took most of the summer, and in late June the first counselors were hired. By the end of FY89, more than half of installations had clinicians working in the ADAPCP. This provided AMC with full capability to treat military and civilian personnel and their family members for alcohol and drug related problems.

Child Development Services. In 1989, Child Development Services provided full day, part day, and hourly child care services in centers and/or government quarters at 21 installations. The \$7.7 million program enrolled 9,147 children from ages 4 weeks to 12 years. New MCA child development centers opened at Yuma Proving Ground and at Selfridge Air National Guard Base.

Office of Program Analysis and Evaluation

Mission and Organization

A decision by the Command Group abolished the DCS for Management and Analysis on 31 March 1988, and on 7 April 1988 the Office of Program and Analysis, which was established on 1 October 1987, became the DCS for Program Analysis and Evaluation. Two spaces were transferred from the DCS for Management and Analysis to the DCS for Program Analysis and Evaluation. The functional Chief Representative (GS-15) from the DCS for Management and Productivity was also required by the new DCS.

Another Command Group decision assigned the AMC Systems Management Office, previously under the DCS for Management, to the DCS for Program Analysis and Evaluation on 6 April 1988. The U.S. Army Materiel Systems Analysis Activity (AMSAA) was also acquired from the DCS for Program and Evaluation on 1 April 1988.

With authority from the Chief of Staff, automated functions previously performed by the DCS for Resource Management were transferred to the DCS for Program Analysis and Evaluation on 16 August 1988. By the end of the fiscal year, the DCS was authorized two military and 48 civilians, an increase of 18 civilian personnel. The DCS for Program Analysis and Evaluation was Mr. Michael C. Sandusky and the Assistant DCS was COL Duane H. Myers who succeeded COL Dale R. Price.²⁵

Source Selection Evaluation Board

The DCS for Program Analysis and Evaluation represented AMC on the Source Selection Evaluation Board (SSEB) which was designed to select a contractor to put the Decision Support Experimentor (DSE) on the HQDA Decision Support System (DSS). Other board members were from the Decision Support Management Agency (DSMA), Secretary of the Army for Research, Development and Acquisition, and Office of the Deputy Chief of Staff for Operations. As part of the HQDA DSS, the DSE facilitated decision makers in exploring "what if" scenarios involving Army equipment, logistics and budget data.

Operations Research/Systems Analysis Bulletin Board System

Major responsibilities delegated to the DCS for Program Analysis and Evaluation involved career management for AMC Operations Research Officers and Army-wide Operations Research/Systems Analysis civilians. To support these efforts and to build a sense of community among Army Operations Research/Systems Analysis (ORSA), an electronic bulletin board system (BBS) was established. This BBS allowed Army ORSAs world-wide to communicate with each other, share "lessons learned," exchange useful software, and learn about forthcoming training opportunities. BBS gave a tremendous communication capability at almost no cost to the command.

Budget and Program Resources Review Response to AMCLOG 21

AMCLOG 21 is a study of AMC Logistics in the 21st Century. An analysis of the May 1988 BPRR submissions from the MSCs and SRAs was made to determine to what degree requirements were presented as AMCLOG 21 deficiencies in the most recent AMCLOG 21 Mission Area Development Plan. The study presented the following recommendations for the improvement of the AMCLOG 21 process:

- * Better cooperation between functional proponents and budget/programming experts to enable AMCLOG 21 requirements to reach funding documents.
- * Better communication between MSCs and the headquarters in tracking all corrective actions.
- * Rescheduling AMCLOG 21 events to permit the biannual Materiel Acquisition Development process to correspond with the biannual BPRR cycle.
- * Modifying the AMCLOG 21 concept to allow the inclusion of major Operations and Maintenance (OMA) deficiencies.

²⁵DCS for Program Analysis and Evaluation Historical Submission, FY88. Hereafter, all information in this chapter is from this source unless otherwise indicated.

Intermediate Range Nuclear Forces Treaty

The DCS for Program Analysis and Evaluation participated in the INF Treaty Ad Hoc Working Group which addressed such topics as on-site inspections, backfill of equipment to units losing PERSHING, and FY89 funding problems. AMC used PS7 FY89 funds and expected a reprogramming of the funds later in the fiscal year.

AMC Guidance 1990-1994

The *AMC Guidance* was a major resource management document which merged specific AMC guidance with total Army guidance. Responsibility for developing guidelines, editing and publishing the *AMC Guidance* was transferred from the DCS for Resource Management to the DCS for Program Analysis and Evaluation on 1 October 1987 because of a headquarters reorganization. The *AMC Guidance* was published in July 1988.

Long Range Research and Development Acquisition Plan

With the creation of the DCS for Program Analysis and Evaluation and the subsequent mission change for the DCS for Resource Management, it was determined that the split in responsibilities for the Long Range Research and Development Acquisition Plan (LRRDAP) was unworkable. The total responsibility for LRRDAP was given to the DCS for Development, Engineering and Acquisition, with an additional action officer (GS-14) and another space acquired to accomplish this function.

Base Support Area Mission

Since the responsibility for the Base Support Area Mission was established specifically for the DCS for Resource Management, it was not appropriate to incorporate this responsibility into the functions of the DCS for Program Analysis and Evaluation. The DCS for Resource Management retained this function and its Program Budget and Policy Division was designated as the Mission Area Manager (MAM). This realignment involved no spaces, but responsibility for AMC Guidance, Program Analysis and Resource Review (PARR) and BPRR Commander's Letter, and the Program Decision Memorandum (PDM) were included in the DCS for Program Analysis and Evaluation mission. Two spaces were acquired from the DCS for Resource Management to accomplish these functions.

Information Management Initiative

At the request of the Command Group, an evaluation was completed on the high-speed LAN configurations that allowed rapid omni-directional Multi-System Disc Operating System (MSDOS) based data and graphics communications and storage within the Command Group. Procurement action was initiated to construct a Command Group sub-LAN with connections for the DCS of Resource Management, and the DCS for Program Analysis and Evaluation. Software development and associated training was also initiated, and a LAN bridging of a 3COM signal across Sytek (a broad band cable network also installed in HQ AMC) was demonstrated by the DCS for Program Analysis and Evaluation.

FY90-94 Summer Program Review Schedule (Program Decision Memorandum Cycle)

After the Army submitted the Program Objective Memorandum (POM) in FY88, the Office of the Secretary of Defense's Resources Board identified major program issues in the Program Decision Memoranda. The memoranda which formally approved the POM provided the basis for budget formulation. The issues identified entailed providing alternatives to certain proposals in the POM. Few of the issues were passed on for resolution at the AMC level since HQDA operated relatively independently. HQDA attributed the lack of activity to the Army's well-documented submission.

Commodity Management Decision Package Restructure Program

During the FY90-94 POM process, AMC experienced difficulty in supporting and defending the commodity Management Decision Packages (MDEPs). As structured, the commodity MDEPs did not represent logical resource program packages nor did they reflect the way AMC managed OMA resources. This situation, in an era of extremely constrained funding, could lead to a loss of critical AMC resources. Therefore, the DCS for Program Analysis and Evaluation, in conjunction with functional organizations, developed an alternative MDEP structure.

The objective of the restructuring was to more accurately satisfy AMC's planning, programing, budgeting and execution system (PPBES) requirements. The MDEP architecture developed was designed to facilitate the defense of AMC's resources in the POM process and in decrement drills, and to more adequately assign responsibility for the management of new MDEPs within the headquarters. The proposed new structure was scheduled to be submitted to HQDA in November 1988.

Office of Equal Opportunity

Mission and Organization

The mission of the Office of Equal Opportunity (OEO) was to manage and direct the Command's Equal Opportunity (EO) and Equal Employment Opportunity (EEO) programs, policies, and operations.²⁶ Ms. Marilyn Scarbrough became Director of OEO on 24 August 1989. She replaced Ms. Jessalyn L. Pendarvis who became the Director of Civil Rights for the U.S. Agency for International Development in April 1989.²⁷

EEO Program

Affirmative Employment Program. The OEO was in the first operational year of a five-year affirmative employment program plan for minorities and women. The office had scheduled the preparation of yearly updates and accomplishment reports, to be submitted through the DA to the EEO Commission.

Equal Opportunity Management Information System. This fiscal year was the most productive since the implementation of the automated Equal Opportunity Management Information System. Contracts approved at the end of FY88 were implemented during this fiscal year. Of the four contracts in process during FY89, three were completed. The four contracts were:

- * A Functional Description Contract required by DOD Directive 7935. It established a road map for the complete development of an automated system for an EEO office.

- * A Conversion Contract that provided for the conversion of the "50 Family Report," an AMC source document for statistical information. Software was being modified for utilization of the Army Civilian Personnel Data System (ACPERS).

²⁶AMCR 10-2, *Organization and Functions*, p. 7-10.

²⁷Office of Equal Opportunity Historical Submission, FY89. Hereafter, all information for this chapter is from this source unless otherwise indicated.

* An Integration Contract completed in all MSC installations and activities, except MICOM. This contract placed standard software and hardware configuration in each of the EEO offices within AMC.

* An SMS INTEL Contract was also completed for all installations. This contract delivered the standard INTEL hardware to all AMC EEO offices.

Implementation of ACPERS began in FY89, but only in CPOs. EEO offices were not connected to ACPERS and the benefits that this DA system would provide AMC EEO Offices was unclear.

Development and testing of EOMIS 2.0, an AMC developed software package for EEO, was continued and the release date was set for the 2nd quarter of FY90. Problems with MMDF and Advantage (software packages) were corrected, and software ran on the INTEL 320 computers.

The Functional Coordinating Group (FCG) met twice during this fiscal year. The first time was in January via Venus teleconference and the second time was in San Antonio, Texas, following the AMC ACPERS Conference in June. This group approved the Functional Description and Automation Plans for FY89 and FY90.

EEO/EO Program Evaluations. A limitation on travel funds forced a reduction in the EEO/EO program evaluation schedules. However, program evaluations were conducted at EO/EEO offices at LABCOM, TECOM, and Aberdeen Proving Ground. An EEO staff visit was conducted at Corpus Christi Army Depot. These evaluations assisted commanders in implementing effective EEO/EO programs, ensuring unity of effort.

Manpower Staffing Standard Systems Study. HQDA conducted a Manpower Staffing Standard System (MS-3) study during FY88 to determine the appropriate staffing level for EEO offices Armywide. However, the results were not available by the end of FY88. Initial applications of manhours and workload data were developed in FY89 and were under revision because of on-going negotiations between AMC's Force Development Division and this office.

HQDA recommended the consolidation of small EEO offices located in the same geographical areas. This office reviewed proposals for the consolidation of Anniston Army Depot with Fort McClellan; TRADOC's Ordnance Center and School with the Aberdeen Proving Ground (APG); Rock Island District, Corps of Engineers (COE) with Rock Island Arsenal; the Materiel Technology Laboratory with Natick Laboratory; and the U.S. Army Strategic Defense Command/Huntsville Division with MICOM. AMC and the U.S. Army Force Integration Support Agency (USAFISA) agreed to the consolidation of the TRADOC's Ordnance Center and School with APG and to the non-consolidation of all the others.

Classification Study. HQDA conducted an Equal Employment Opportunity Officer (EEOO) grading study during July-September 1988. The study examined the consistency of EEO grading within DA, grade disparity between EEOO and Civilian Personnel Officer positions, and the adequacy of the OPM position classification standard. As a result of this study, Equal Opportunity Officers assigned to HQDA will not be given grades lower than a GS-12.

Accountability Study. In FY88 DOD sponsored a study of supervisory accountability for the accomplishment of the EEO Mission. The study involved a review of standards for the EEO critical element and a description of performance against the standards. This study reviewed performance management plans at HQ AMC and Fort Belvoir, Virginia. In FY89 these Army activities were found to have good performance management plans which were favorably compared to Navy and Air Force.

Federal Women's Program. The completion of the initial prevention of sexual harassment (POSH) training within the command was reported to HQDA in September 1989. This was a major accomplishment

since AMC had trained more than 100,000 soldiers and civilians in the command since the program's inception in 1981. Repetitive training was also necessary because of personnel changes at AMC installations.

In September 1989, the AMC Federal Women's Program (FWP) Manager was the command representative for the DA Task Force on Training to Counter Sexual Harassment. The task force recommended that this training be addressed in general guidance on EEO training, and be incorporated into Chapter 4 of AR 690-12. The revised guidance will make installation commanders responsible for identifying and addressing the training needs of assigned personnel. It will also give MACOMs a key role in evaluating the effectiveness of their installation programs.

The FWP manager represented AMC at the Federal Employed Women's National Training Program in Memphis, Tennessee. A presentation on effective staff coordination was made at the DOD Forum which was attended by more than 500 representatives from throughout DOD. AMC's FWP Manager also assisted the DA FWP Manager in the presentation of training for new FWP managers in San Antonio, Texas, in October 1988, Kaiserslautten, West Germany, in December 1988, and Alexandria, Virginia in May 1989.

Hispanic Employment Program. The Hispanic Employment Program (HEP) Manager represented AMC at the League of United Latin American Citizens (LULAC) Annual Conference in Washington, D.C., the National Council of Hispanic Women's Annual Conference in Washington, D.C. and at the Society of Hispanic Professional Engineers Annual Job Fair in Philadelphia, Pennsylvania. The HEP Manager was a member of the DA Team conducting training for new HEP Managers in New Orleans, Louisiana, in February 1989 and in Kaiserslautten, West Germany, in May 1989.

EO/EEO Training Program. EO/EEO briefings were made to new commanders at the U.S. Army Logistics Management College's Logistics Precommand Course in January, March, May, June and September 1989. An EO/EEO briefing was also made to new inspectors general at the AMC IG Course.

Complaint Processing. The Office of Equal Opportunity monitored resolution rates of equal employment opportunity complaints. A total of 382 formal complaints were filed throughout the command in FY89. Of the total filed, 43 were closed with four (9.3 percent) findings of discrimination.

Reduction of Underrepresentation. Most of the adjusted goals to correct underrepresentation of women and minorities in the AMC work force were achieved. The AMC full-time work force strength was increased by 3,376 in FY89. Adjusted goals were met for African American and Hispanic men, and Caucasian women. Goals were not met for Asian/Pacific Islanders. No goals were established for Native Americans. The major area of gross underrepresentation was in AMC's employment of women. Although there was some underrepresentation of African American and Hispanic men, it was not a manifested imbalance.

Equal Opportunity Program

Commander's Assessment. The overall command's Equal Opportunity (EO) climate was in consonance with policies established by the DA and AMC. Quality of life issues continued to be one of the most important objectives within this command. The positive responses of soldiers, civilians and family members assessed during program evaluations and EO reports indicated that the chain of command, throughout AMC, was practicing excellent leadership skills. Staff assistance visits by HQDA to two major subordinate commands reflected that AMC's EO program appeared to be making tremendous progress.

Ethnic observance events were very successful with great participation by various representative groups to enhance cultural awareness. AMC efforts were directed towards a commitment of "First Among Equals."

Force Content. An evaluation of the command's military strength revealed that:

- * Women were 7.8 percent of the commissioned officer strength, a decrease of 0.6 percent from FY88 (8.4 percent).
- * Enlisted women's strength decreased slightly from 870 in FY88 to 765 in FY89.
- * Women were 12.6 percent of the enlisted strength, down 0.6 percent from FY88 (13.2 percent).
- * Women were 20.6 percent of the enlisted grades E1-E5, up 2.9 percent from FY88 (17.7 percent).
- * Minorities were 14.2 percent of the commissioned officers, 10.5 percent of the warrant officers, and 35.1 percent of the enlisted strength.

Minorities constituted 33.2 percent of the soldiers in grades E1-E5: 26.1 percent were African American, 3.2 percent were Hispanic, 0.3 percent were Native American, 1.2 percent were Asian/Pacific Islanders, and 2.3 percent were classified as "Other/Unknown".

Staffing. The command had 20 authorized Equal Opportunity Adviser positions. Year-end fill for FY89 consisted of 17 school trained NCOs, and there were three vacancies. Most AMC depots, activities, and installations were staffed with collateral duty personnel because of their small military population.

Military Justice Actions. Article 15s, Unfavorable Discharges, and Courts Martial decreased from 189 in FY88 to 155 in FY89 (21.9 percent). There were no trend analyses that indicated a disproportionate incidence among females or minorities.

Complaints. Complaints increased from 8 in FY88 to 9 in FY89. Of these, 4 complaints referenced race, 2 were sexual harassment, and 3 were gender related complaints. All complaints were resolved within the chain of command.

Majority/Minority Selection Rate. Enlisted promotions continued to show parity throughout the fiscal year. A review of the minority selection rate by ethnic group/race showed that Hispanics, Native Americans and Asian/Pacific Islanders had a higher selection rates than all other ethnic groups.

Equal Opportunity Training. The EO goal was to train 8,219 military and 2,108 civilians. The actual accomplishment was 8,037 military and 2,072 civilians, representing 97.8 percent for military personnel and 98.3 percent for civilians.

Affirmative Action. Primary goals of affirmative action were to conduct Program Evaluation Visits to MSCs and to closely evaluate punitive actions to ensure that all soldiers were fairly treated in their pursuit of quality of life. Providing the momentum to pursue personal and professional goals, monitoring the staffing of EOA positions throughout the command, and ensuring the adequacy and continuance of the EO education and training programs through the utilization of an EO training plan were also primary goals, and all goals were accomplished during FY89.

Community Affairs. MSCs reported their involvement in community activities such as Blacks in Government, Community Outreach, Public Affairs, Red Cross, Boy/Girl Scouts, and co-celebrating ethnic observances. Activities varied according to geographical location. Community involvement in ethnic observances appeared to make the greatest contribution to better understanding between military and civilian populations throughout the command. In many of the MSCs, local community officials used the experience and knowledge of EO Advisers to assist them in creating their ethnic observance displays.

Safety Office

Organization and Mission

The Safety Office had a manpower authorization of 13 which included 12 civilians and one military officer.²⁸

Aviation Accident Rate

The command's aviation activities had no Class A accidents and earned a Zero Class A rate based on 35,095 hours of flight. One Class C accident resulted in a 2.85 Class ABC rate based on the same flying hours totals.

Civilian Resource Conservation Program

The HQDA mandated Civilian Resource Conservation Program had four goals for FY89-FY93, to reduce each of the following by 2 percent per year:

- * New lost-time compensation injuries
- * Days of continuation of pay
- * Compensation costs
- * Compensation cases on long-term rolls

AMC achieved the FY89 reduction goal assigned by HQDA.

Safety Awards Program

Instituted in accordance with AMC Circular 385-6, the noncompetitive Safety Awards Program consisted of three levels of achievement. Each MSC evaluation was based on criteria that included such elements as meeting assigned goals, sharing good ideas, being responsive to field and higher headquarters, and implementing special emphasis programs. The FY89 performance was the second year covered by this program.

Safety Awards of Excellence were sent to AMCCOM, CECOM, and TROSCOM. Safety Awards of Honor were received by DESCOM and LABCOM. AVSCOM, MICOM, TACOM and TECOM each received a Safety Commendation.

Safety Coordination

This office was designated as the electrical representative to the NATO AC310 Subgroup III which defined NATO mechanical and electrical environments and established tests to verify system safety and reliable performance in these environments.

²⁸Safety Office Historical Submission, FY89. Hereafter, all information in this section is from this source unless otherwise indicated.

The Safety Office was the AMC representative to the Army Fuze Review Board, and it chaired the HQDA System Safety Coordinating Panel, Technical Subpanel. It was also the designated representative on the DOD Committee on Interagency Ionizing Radiation Research and Policy Coordination. This office also chaired the AMC Safety Working Group for Underground Storage, and served as lead agency producing, publishing, and disseminating AMC Regulations 385-103 and 385-104.

Decontamination

AMC Handbook 385-1.1-89, *Safety Procedures for Processing Depleted Uranium*, was distributed.

Design or Materiel Defect Accidents

For the fourth straight year, AMC Safety efforts and accomplishments reflected reduced design or materiel defect accidents reported by soldiers in the field. This reduction was in both absolute terms as well as a percentage of all reported accidents.

Explosive Accidents

AMC reduced the number of explosive accidents by 11 during FY89. The FY89 total was 19 as compared to 30 during FY88.

Office of the Surgeon

Mission and Organization

The Office of the Surgeon was authorized nine personnel during FY89. There were no changes in the positions authorized during the fiscal year. The Surgeon was Colonel George E. T. Stebbing, who took over that position in October 1988²⁹

Preventive Medicine Support to AMC

The Surgeon served as the medical member of the Blue Ribbon Panel appointed by MG Marvin D. Brailsford (AMCCOM) to review toxic operations of CRDEC. The Panel was appointed following the investigation of a human exposure to a chemical agent during a laboratory operation at CRDEC. The panel membership was from 30 January through 1 March 1989.

The Surgeon and Occupational Health Physician participated in the HQDA Deputy Chief of Staff for Personnel (DCSPER) Federal Employees Compensation Act workshop.

The U.S. Army Environmental Hygiene Agency (USAEHA) provided consultative services essential to compliance with environmental and occupational health laws and regulations. This office planned and coordinated these services, evaluated recommendations for adequacy and appropriateness, and required responses from the requesting subordinate commands on those issues affecting regulatory compliance. Services costing an estimated \$1,025,000.00 were provided at no cost to AMC.

²⁹Office of the Surgeon Historical Submission, FY89. Hereafter, all information is from this sources unless otherwise indicated.

During FY89, USAEHA provided a total of 218 services to AMC installations in support of the following programs: occupational health - 47; air, water, solid and hazardous waste pollution control, and water supply - 104; pest management - 13; laser, microwave, and ionizing radiation exposure control - 54.

Health Hazard Assessment

The HHA officer provided, assisted with or arranged, for medical support for Army materiel systems that had identified health hazard issues. He ensured that these health hazard issues were appropriately evaluated, eliminated or controlled without adversely impacting acquisition cost or schedules.

The HHA officer developed and manually loaded the new HHA data base into the AMC system. He served as the AMC Command Surgeon's point of contact for the Medical Functional Area Analysis and the Deployable Medical Systems. He also served as a member of the HIP's system safety working group and the technical integration working group for the PM Clothing and Individual Equipment.

The Office of the Surgeon coordinated and monitored over 200 requests for health hazard assessment (HHA) support during FY89 from PEOs, PMs, and AMC's MSCs, for a 135 percent increase in technical workload. Efforts included review of data, consulting with the AMC MSCs and PMs, coordinating with HQDA, other Services, the AMC system staff engineers, TRADOC, and the Army Medical Department to ensure that the HHA program was providing a necessary service.

In addition, effort was expended to ensure that the HHA reports resulted in timely medical input to control and eliminate health hazards for all developmental and non-developmental items of equipment. The recommendations contained in the HHAs provided specific administrative and engineering controls to reduce the adverse health impacts to operators and maintainers of these systems.

The HHA officer assisted the Surgeon General in health hazards prioritization being conducted by the U.S. Army Medical Research and Development Command. The HHA officer also provided HHA input to the new AR 40-10, *The Army Health Hazard Assessment Program in Support of the Army Materiel Acquisition Decision Process*; AR 70-1, *System Acquisition Policy and Procedure*; AR 385-16, *System Safety Engineering*; and to MANPRINT and the Materiel Release Process for Nondevelopmental items (NDIs).

The Office of the Surgeon continued to coordinate key information to support the medical assessment of the Bradley Fighting Vehicle System (combustion products because of muffler/dual AFES), the M40 and M43 Protective Mask (skin sensitizer/hood), STEPO-I (chemical agent suit), XM215/216 Modular Propellant Charges (BOP, combustion product), Source Selection Boards for the Line-of-Sight Forward Heavy, Family of Medium Tactical Vehicles, Advanced Antitank Weapon System-Medium, M109 Howitzer Improvement Program (HIP), NBC Reconnaissance Vehicle, LONGBOW APACHE, LAW Users Test, and numerous training devices and new munitions.

Medical Support

This office provided direct medical oversight for the Influenza Immunization program at HQ AMC in November 1988. One hundred-five military and one hundred seventy-six civilian personnel were vaccinated.

There was a requirement for a standard format for the Command Health Report (CHR), which documented the health of military and civilian personnel at AMC installations. It was prepared monthly, in accordance with AR 40-5, and forwarded through the installation commander to the Office of the AMC Surgeon for submission to Health Services Command (HSC). CHR information was incomplete and seldom useful. This office was working with HSC to develop a report format which will better assess the health of the command.

Child Care Facility Evaluations

HQDA Community and Family Support advocates required follow-up Child Development Service Evaluations to validate subordinate command inspections, to assure effective, safe and healthful provision of child development services. Medical augmentation was provided to MACOM Child Care Evaluation Teams, and to pre-occupancy inspection teams, to prevent exposure to health and safety hazards.

Medical Support to the Surety Mission

With the institution of Surety Management Reviews (SMR) of Chemical and Nuclear installations by this headquarters, a new means to obtain medical support was needed. The Surgeon's Office did not have sufficient personnel to participate on both AMCIG and the SMR visits. Recognizing that few medical officers were involved in surety operations, even though many military hospitals have contingency plans to support AMC installations in the event of an accident, and that all the clinics on AMC installations belong to a larger Army hospital, it was decided that the base of Army Medical Department (AMEDD) personnel supporting IG inspections and SMR's had to be widened.

The AMC Office of the Surgeon put forward a plan which was accepted by the Office of the Surgeon General (OTSG) and HSC, to have the Preventive Medicine Service of the supporting Medical Department Activity/Medical Center (MEDDAC/MEDCEN) participate in the SMR and a physician from the USAEHA participate in IG inspections. This would have several effects: it would force the supporting MEDDAC/MEDCEN to become actively involved in the surety program at the clinic level; it would broaden the number of physicians with surety experience; and it would create a layering of responsibility at successively higher levels within HSC.

This office participated in six surety and operational inspections (SOI) at AMC installations. During these inspections, various aspects of medical support to the surety program were evaluated which included occupational health surveillance, training, health care provided during emergency exercises, records management, and external support to the installation from civilian and military medical activities. This office served as liaison with HSC in correcting medical deficiencies identified during inspections.

Occupational Medicine

This office provided instruction to residents in Preventive Medicine and Occupational Medicine, and accompanied the residents to industrial sites within the command. The preventive medicine residents visited Pine Bluff and Rock Island Arsenals, Anniston and Tooele Army Depots and Dugway Proving Ground. The Surgeon was also an active member of the residency review committee for the PM residency program at the Walter Reed Army Institute of Research and the Occupational Medicine residency program at the U.S. Army Environmental Hygiene Agency.

The chief of Occupational Medicine presented a lecture on the Army Low Back Complaint Program at the AMC-sponsored FECA Workshop on 9 February 1989. He also attended the Preventive Medicine Officers' Short Course, the Occupational Health Course (advanced), and the Medical Management of Chemical Casualties Course.

Industrial Hygiene

Halon Alternative Research Consortium First Technical Committee Meeting. On 3 March 1989, the industrial hygienist from this office participated at the meeting which explored the ramifications of the general agreement made between the Environmental Protection Agency, the Department of Defense, various federal agencies concerned with fire protection, and chemical manufacturers to form a consortium to develop chemical alternatives to halon. This effort was supported by DOD Directive 6050.9, effective date, 13

February 1989, requiring DOD to comply with the Montreal Protocol and its milestones regarding cessation of utilization and manufacture of halons to prevent the depletion of ozone in the stratosphere.

Employee Exposure Grievance Investigation. In response to a request from The Surgeon General, the industrial hygienist from this office visited Rock Island Arsenal on 24-25 October 1988 to personally inspect the employee's worksite and review industrial hygiene data quantifying his occupational exposures to toxic chemicals. It was determined that the employee had been exposed to industrial chemicals which may cause respiratory irritation; however, there was no indication that he had been exposed to concentrations likely to cause irritation.

Occupational Health Conference. The industrial hygienist participated in the occupational health aspects of advanced composite technology during the Aerospace Industry Conference held on 6-9 February 1989 in order to identify future AMC medical requirements associated with this materials technology and to recommend ways to meet them. The major factors which contributed to highly sensationalized accounts of negligence by DOD contractors were inadequate manufacturing facilities for making and using composites, ineffective hazard communication programs, incomplete occupational health/industrial hygiene input, and lax enforcement of safety regulations. Future AMC development projects involving composites will have appropriate medical input through the Health Hazard Assessment program, including "black box" programs to prevent occupational disease and anxiety related illness.

Health Advisory on Water Coolers

A health advisory dated 4 May 1989 was sent to installation commanders, stating that the Environmental Protection Agency (EPA) had published a listing of water coolers thought to have lead-containing components including fittings, lead-lined tanks, and/or leaded solder and flux. Commanders were requested to inventory water coolers, and consider removal or daily flushing of suspect water coolers, particularly where small children were frequent users.³⁰

Pest Management Materiel Readiness

This office worked with the Armed Forces Pest Management Board to limit the use of the 2 percent d-phenothrin aerosol containing chlorofluorocarbon propellants to operational forces and to recommend that the Defense General Supply Center (DGSC) proceed with the purchase of the next year's stock of two percent d-phenethrin with the freon 12/11 propellant as specified unless the purchase of Dymel 22/HCFC 142b propellant was permitted under contract rules.

The office assisted the U.S. Army General Materiel and Petroleum Activity in establishing usage rates for certain war reserve pesticides, and in the removal and disposal of a repellent, M1960, from the war reserve inventory.

This office reviewed and recommended changes to the draft TB MED 561, "Pest Surveillance." It worked with the OTSG Working Group on Pest Management Materials and Operations to develop an agenda for the 1990 Medical Entomology Course.

Tracking and Management of Medical Wastes

Under the provisions of the Medical Waste Tracking Act of 1988, a pilot program was initiated in selected states to require strict cradle-to-grave tracking of medical wastes during the period 22 June 1989 - 22 June 1991. Federal facilities were specifically included in this requirement. Installation commanders

³⁰Memorandum, COL Stebbing for Distribution, 4 May 1989, subj: Lead in Drinking Water Coolers.

in the affected states were advised on 2 June 1989 that compliance was a shared responsibility with tenant medical facilities. However, failures in compliance would reflect adversely on the installation, not on the tenant.³¹

Intermediate Nuclear Forces Treaty

This office updated the Medical Annex to the AMC Plan for the INF Treaty to include lessons learned from baseline inspections. The document provided planning assumptions and additional guidance in the medical area for AMC activities to successfully plan and implement the on-site inspection provisions of the INF treaty.

Service Response Force Exercise

The chief of Occupational Medicine provided medical support for the 1989 Service Response Force Exercise (SRFX-89). He participated as a controller for the medical portion of the exercise, responsible for developing the medical play and serving as an observer. Heat stress injuries and the need for a standard methodology for estimating casualties were identified as problems.

MISERS GOLD Event

An observer from the Surgeon's office was sent in June 1989 to the MISERS GOLD Event, a large-scale Defense Nuclear Agency sponsored High Explosive test. The test provided an airblast and ground motion environment that was used by numerous DOD and foreign agencies to collect basic explosive environment data, and test a variety of systems and equipment in an approximated nuclear blast and shock environment.

Office of the Inspector General/Inspector General Activity

Mission and Organization

The mission of the AMC Inspector General and AMC Inspector General Activity was to inquire into and report upon matters that pertain to the performance of mission, and the state of discipline, efficiency, and economy within AMC; coordinate inspector general activities throughout AMC, and perform such other duties as are required by law and regulation, or as directed by the Commanding General. The Inspector General was Colonel James L. Tierney.

The authorized strength of 22 military and 51 civilians was increased to 24 military and 52 civilians as a result of the following changes. Five spaces were transferred from the AMC Surety Field Activity to the AMC IG Activity along with the responsibility to conduct surety technical inspections (one each COL, LTC, Warrant Officer, GS-13 and GS-7). A GS-12 position was converted to a GS-11 position in order to establish a computer program analyst position at the AMC site at Fort Belvoir. A GS-7 position was reduction due to a cut directed by HQ Manpower Division. One LTC FA 51 position was lost due to a cut in the Officer Distribution Plan.³²

³¹Memorandum, COL Stebbing for Distribution, 2 Jun 89, subj: Tracking and Management of Medical Wastes.

³²Inspector General and AMC Inspector General Activity Historical Submission, FY89. Hereafter, all information for this section is from this source unless otherwise indicated.

Assistance Program

In FY89, the AMC IG Activity changed the Soldier Support Inspections, which resulted in findings, to Soldier Support Assistance Visits and combined them with the Assistance Program. This resulted in an actual transfer of two enlisted spaces from the Inspections Division to the Investigations and Assistance Division. The Soldier Support Assistance Team reviewed how administrative, personnel and training offices were managed under established regulations and procedures. The Soldier Support Assistance Team also reviewed soldier support in the areas of medical, dental and Army community service programs.

The purpose of the Assistance Program was to provide AMC personnel and their families the opportunity to express their opinions, and provide suggestions on a broad range of policy and programs. The program's guarantee of nonattribution and freedom from retribution fostered meaningful dialogue and honest input by participants. The program's policy of leaving issues at the lowest appropriate level and not requiring formal followup reduced the perception among commanders that the program was a threat to their operations. Commanders from detachment to MSC level expressed appreciation for the candid feedback provided to them. Positive outcomes of the program ranged from improvements in operating hours for support activities to improved military police assignments to AMC installations.

Technical Inspections

In coordination with the Department of the Army Inspector General (DAIG), AMC IG incorporated the surety technical inspection functions of the Surety Field Activity at Picatinny Arsenal. This realignment was effective 1 October 1988 and it standardized AMC surety functions with the DAIG and other MACOM IG offices.

Planning and Analysis

The AMC IG Planning and Analysis Team completed its analysis of systemic issue candidates and briefed IG activity top management. The AMC IG presented recommended systemic issues and special inspection issues to the CG, AMC and received his approval. Systemic inspections were scheduled for FY90 on Depot Maintenance Work Request, Quick Buy Program, and Army Corrosion Prevention and Control Program. The FY90 inspection plan was published reflecting procurement, systemic and followup inspection schedules.

Inspections

Inspections Conducted. During FY89 the Inspector General Activity conducted 44 inspections throughout AMC. Four types of inspections were conducted: Systemic issue inspections; procurement inspections of a compliance nature; surety technical inspections; and a special inspection.

Six systemic issue inspections were conducted covering the following issues: Engineering for Transportability, Total Package Fielding, Materiel Change Management (MCM), Manpower and Personnel Integration (MANPRINT), Utilization of Military Personnel within AMC, and the Precious Metals Recovery Program (PMRP). The following are some areas where deficiencies were identified:

- * **MCM.** The formal training needed improvement and more procedural guidance was required. Funding out-of-cycle changes was not systematic, and greater oversight and internal controls were required.

- * **MANPRINT.** Authority and utility of system management plans were not clearly defined, and the responsibilities and procedures for assessments were unclear. The program was under-resourced in terms of dollars and personnel, and systemic problems in several areas hampered the institutionalization of the program.

* **PMRP.** Regulations and guidance were inadequate. Precious metals coordinators had not been appointed, and items containing precious metals were incorrectly coded in data files. Personnel had not been trained, and security and storage were not implemented in accordance with regulations.

Procurement Inspections. Thirteen procurement inspections were conducted that covered the areas of utility contracting; contract pricing; acquisition of information resources; task order contracting; competition in contracting; small purchases and small business; contracting for operations, maintenance and continuing services; acquisition planning; and other topics relevant to ensuring that AMC procurement offices were complying with applicable regulatory requirements.

In general, procurement activities were providing quality acquisition services and maintaining a commendable level of excellence. The physical security and integrity of the procurement process was found to be satisfactory at all places visited. Examples of some positive actions taken were: reducing paperwork for small purchases due to the initiation of a unique file administration system; training contracting officer representatives; and establishing procedures for a procurement monitoring system which decreased problems in procurement administrative lead time and administrative lead time.

Some of the areas where deficiencies were identified included splitting or reducing requirements to avoid the small purchase dollar limitation; improperly documenting Price Negotiation Memorandums (PNMs); the administration of utilities contracts; appropriated and nonappropriated fund purchases were not in accordance with contracting policies; justification and approval documentation; and the need for more complete documentation of the Business Clearance Memoranda.

Surety Technical Inspections. The four types of surety technical inspections were the Nuclear Weapons Technical Inspections (NWTIs), Chemical Surety Inspections (CSIs), Limited Scope Surety Inspections (LSSIs), and Reactor Facility Inspections (RFIs). There were 24 technical inspections conducted at 17 AMC activities in FY89. Deficiencies resulting in failures were in the areas of security, accident/incident response assistance, external support, safety, and surety management. A special inspection of bolts was conducted at eight AMC locations covering the method of ordering/receiving, instructions received, method of storage and issuance, and training of personnel regarding handling.

Elimination of Response By Endorsement. A significant change in responding to Inspection Reports was instituted in the latter part of FY89 with the elimination of responses by endorsement. The response by endorsement was a method by which each office responsible for corrective action responded to the IG office, sometimes several times, until cited deficiencies were corrected. Under the new method, the commander tasks one DCS with responsibility for developing a plan of corrective action. The new method is beneficial in that it saves a significant amount of paperwork and provides a much more comprehensive and effective method of corrective action.

Followups to Inspections. Seven on-site followups to inspections were conducted during FY89 which included initial followups on Integrated Logistics Support, Configuration Management, and Displaced/Separated Equipment. Second followups on the AMC Schools Program, Career Intern Program, Management of Joint Actions and Subject Matter Assessment Implementation were also conducted. Followups were an important and effective means of determining whether cited deficiencies had been corrected.

Policy Compliance Reviews

Commanders made their IGs responsible for ensuring that their IGs performed full service support, including inspections, investigations, assistance, followups, teaching, planning and analysis, and information management. In accordance with AMCR 11-45, the AMC IG Activity performed policy compliance reviews

at each MSC once every two years to assess compliance with established policy, and the ability of the IG organization to perform its mission. During FY89, Policy Compliance Reviews were conducted at Laboratory Command, Depot Systems Command and Armament, Munitions and Chemical Command IG offices.

Training

The AMC IG Activity hosted the annual Acting Inspector General Course on 26-27 July 1989 at HQ AMC with eighteen Army IGs in attendance. The course consisted of practical exercises and lectures, with guest speakers from Management Employee Relations, Office of Employee Equal Opportunity, Command Counsel and the Department of the Army Legal Office. Forty-five staff members received formal training in management courses related to their positions and five attended the DAIG Course.

Automation

Automation was enhanced within the Activity by the purchase of two Hewlett-Packard laser jet printers, upgrade kits for three Intel 310 microprocessors, and one Hewlett-Packard lapheld computer. The printers will be used as line printers with the Intel systems and with the office centralized PCs primarily for graphics output. The upgrade kits will permit upgrading the Intel 310 microprocessors with a 286 operating system to a noticeably faster 320 microprocessor with a 386 operating system. An additional copy of Harvard Graphics software was purchased to allow for an additional graphics station for use by the Inspection Division personnel. The lapheld computer will be shared by inspection teams while on TDY at inspection sites.

The IG Network (IGNET) system was installed at all AMC MSC command IG sites with the exception of TROSCOM. Formal site administration, user and data base training were also provided. The TROSCOM IG Office was scheduled to receive the hardware in second quarter of FY90. The IGNET system was operational at HQ AMC IG and AMC-Europe IG offices. Mail was operational at all MSC IGNET sites with the exception of LABCOM, TACOM, and TECOM.

Office of the Command Counsel

Mission and Organization

The mission of the Office of the Command Counsel is to serve as the legal advisor to the Commanding General and members of his staff and to act as principal legal advisor to the major subordinate commands, installations and field activities in the areas of law and patents. The Office of the Command Counsel consisted of a Plans and Operations Office, Personnel Law/Litigation Division, General/Military Law Division, Procurement Law Division, and Intellectual Law Division. In September 1989, this office had its authorized military strength, but it had 35 civilians, three less than the authorization. Mr. Edward J. Korte succeeded Mr. Burton M. Blair as the Command Counsel.³³

Preventive Law Program

The Office of the Command Counsel completed 62 percent of its Preventive Law Initiatives. The Preventive Law Program for all AMC Legal Offices was a two-year (FY89-FY90) program designed to initiate and execute preventive measures improve overall efficiency throughout the command. The program

³³Office of the Command Counsel Historical Submission, FY89. Hereafter, all information for this section is from this source unless otherwise indicated.

was comprised of ambitious, but achievable, objectives that were to be accomplished in addition to all requested and programmed counseling, legal assistance and support services furnished daily by counselors in each functional legal discipline. There were 61 initiatives, 38 of which were completed.

Legal Program

The Command Counsel initiated a two-year Legal Program, a distinct change from the previous one-year programs. The Command Legal Program constituted a "blueprint" for the collective efforts to implement the total quality management philosophy throughout AMC and achieve the ultimate objective of being "the best law firm in Government." As such, it represented a firm commitment by the attorneys and staff to the initiation and execution of a comprehensive program of legal support and service to AMC.

Legal Education Program

In November and December 1988, the largest and best Annual Continuing Legal Education Program was conducted in Huntsville, Alabama. Over 200 attorneys from AMC, HQDA, and other organizations attended, and the program was a complete success.

Automation

Each employee was issued a Zenith 248 Personal Computer and a Local Area Network for the Office was installed.

Public Affairs Office

Organization

The Public Affairs Office personnel authorization remained at one officer and 13 civilians for FY89, with two positions being upgraded.³⁴

Information Media

Congressional and national information media interest focused on several issues during FY89, including Defense Management Review, base realignments and closures, aviation and aviation spare parts, chemical demilitarization and the environment.

200th Anniversary of the Constitution

Support for the celebration of the 200th anniversary of the signing of the Constitution of the United States continued throughout the command, with numerous programs and publicity efforts.

Green Book

Substantial support was provided to the Association of the United States Army (AUSA), including an exhibit at the AUSA Annual Meeting, 17-19 October 1988, and preparation of the weapons directory for the October (Green Book) issue of *ARMY Magazine*.

³⁴Public Affairs Office Historical Submission, FY89. Unless otherwise noted, all information from this section is from the above source.

Marketing AMC

Marketing efforts continued to improve the AMC image, communicating the message that AMC is equated with quality. A major effort was the development of a soldier feedback system which included establishment of an ad hoc task force to expeditiously answer questions from soldiers about their weapons and equipment. A new four-color brochure, explaining the AMC mission, was developed for use throughout the command and an environmental video tape was produced to show how AMC strives to protect the environment.

Management of Subordinate Command Public Affairs

With respect to managing and monitoring the Public Affairs activities of the MSCs and installations subordinate to them, the Headquarters AMC Public Affairs Office:

- * Held its annual Public Affairs Symposium, 24-28 October 1988, at Virginia Beach, Virginia.
- * Participated in the Service Response Force Exercise at Pine Bluff Arsenal, Pine Bluff, Arkansas, in June 1989, conducted by the AMC Surety Field Activity, Dover, New Jersey.

Armed Forces Soldiers Radio and TV

A number of video spots intended for release over Armed Forces Soldiers Radio and TV stations were developed, conveying the message that AMC cares about its ultimate customer--the soldier--and the environment. Public Affairs personnel coordinated numerous requests and visits by reporters for interviews with AMC subject matter experts during the fiscal year, as well as assisted in arranging interviews with subject matter experts at major subordinate commands, installations and activities.

Office of the Deputy Chief of Staff for Engineering, Housing, Environment, and Installation Logistics

Mission and Organization

During FY89, the AMC HQ Relocation Office was formed to coordinate the planning, design and construction of a new Command and Control Building for AMC Headquarters. Office personnel staffing included an office chief, two engineers and a management analyst. The staff was comprised of one officer (O-5), a civil engineer, a management analyst, and an administrative officer.³⁵ The DCS of Engineering, Housing, Environment, and Installation had four officers and 42 civilians. The DCS was headed by Colonel Jerry A. Hubbard and the Assistant DCS was David H. Keller.

Command Management Issues

Environmental Restoration Program Execution. In FY89, AMC received \$140 million of a total of \$205.2 million Army Environmental Restoration Program (ERP) funds. This included funding for Rocky Mountain Arsenal which amounted to \$68.3 million in total Army ERP funding. The U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), as the central manager of ERP funds, obligated \$203.5 million Army-wide. A total of 99 percent was obligated, exceeding the 98 percent goal.

³⁵DCS for Engineer, Housing, Environment, and Installation Logistics Historical Submission, FY89. Hereafter, all information is from this source unless otherwise indicated.

Environmental Compliance Program Execution. The Clean Air Act and Clean Water Act were the expensive driving laws of the 1970's, but the regulations implementing the Toxic Substance Control Act (TSCA), Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which came to the forefront in FY82, had a major impact on the command's environmental status during FY88 and FY89. TSCA regulated manufacturing, use, and importation of chemical substances, including polychlorinated biphenyl (PCBs). AMC installations stored and used large quantities of PCBs. RCRA and CERCLA addressed the management of land disposal of hazardous waste. Under RCRA, AMC was spending several million dollars annually to obtain RCRA Part B hazardous waste permits. Under CERCLA, problems at installations with groundwater contamination were quite pervasive. With the amendment CERCLA, the Superfund Amendments and Reauthorization Act (SARA), more hazardous waste requirements were forthcoming on AMC installations.

At the beginning of FY89, AMC had 37 noncomplying installations composed of 2 air noncomplying sources, 11 water noncomplying sources, 36 hazardous waste sources, and 1 solid waste source. At the close of FY89, the total number of noncomplying installations increased to 41 due to increased attention and regulatory emphasis by Federal and State regulators. This revised the list to 4 air noncomplying sources, 19 wastewater noncompliers, 42 hazardous waste noncompliers, 4 drinking water and one solid waste problem area.³⁶

The net AMC compliance posture became considerably worse during the fiscal year in the areas of water pollution and hazardous waste sources. Many of the hazardous waste noncompliances were due to Part B RCRA permit deficiencies where States added new requirements or returned draft permits with procedural violations.

The most pervasive environmental problem at AMC installations was groundwater (GW) contamination. At the start of the fiscal year, AMC had 44 installations with confirmed GW contamination, and this increased by 2 during the fiscal year. At the 46 installations with GW contamination, 16 had contamination migrating off-post and 10 additional installations had the potential for off-post migration. Of these, EPA placed 12 on the National Priorities list and 6 more on the candidate National Priorities list. Monitoring of GW continued from wells to identify the type of contaminants and extent of mitigation.

The CERCLA Act of 1980 required investigation of and response to contamination caused by disposal activities. The DOD program in this area was an outgrowth of the AMC Installation Restoration Program started in 1975, and was managed by the USATHAMA located at the Edgewood Area of Aberdeen Proving Ground. USATHAMA developed protocol for each GW problem, gave press releases and provided technical expertise to installation commanders to help with these GW problems.

Environmental Audits (Environmental Compliance Review) Program. AMC conducted the largest, most aggressive environmental audits program within DOD from 1985-1987. This \$1.2 million program reviewed the compliance status of 64 installations in 34 states in the light of more than 1,000 applicable federal, state and local environmental laws and regulations. The 10 pollution areas covered were: air, water, solid waste, hazardous waste, toxic substances, pesticides, noise, drinking water, spill plans and environmental management.

A follow-on Environmental Compliance Review (ECR) program conducted by AMC Installations and Services Activity (I&SA) continued the environmental audits by an in-house team visiting AMC installations

³⁶Summary of Noncomplying AMC Installations, 30 Aug 89.

on a cyclic basis.³⁷ Twelve multi-media ECRs were scheduled each year and in FY88, eleven had been completed. In FY89, an additional eleven ECRs were completed at Stratford Army Engine Plant, Pueblo Army Depot Activity, McAlester Army Ammunition Plant (AAP), White Sands Missile Range, Kansas AAP, Harry Diamond Lab, Sharpe Army Depot, Lake City AAP, Detroit Arsenal Tank Plant, Longhorn AAP, and Navajo Army Depot Activity. The Lone Star AAP ECR had to be deferred to FY90 due to scheduling conflicts. The AMC Chief of Staff signed each ECR report through the MSCs to the installations and requested a report on the schedule of correction deficiencies within 180 days. AMC installation commanders were required to review their resources and implement corrective actions on a priority basis.

After each ECR, I&SA provided each installation with an Environmental Management Plan to establish the framework and focus on objectives for the corrective action. The Environmental Management Plan was an integrated management approach to implement and represent solutions to environmental management noncompliance issues. In February 1989, the Commanding General, AMC sent a policy memorandum to all MSCs on lessons learned in the AMC ECR Program. This memorandum alerted MSCs and installations to the most pervasive environmental problems in the handling, transporting and management of hazardous materials and wastes. It further established AMC policy that required installation commanders to personally attend the ECR in-briefings and out-briefings at their installations.

The proactive AMC environmental audits received positive exposure in FY89 when a briefing outlining the program was presented to the Army Science Board, the Environmental Auditing Roundtable, Army Logistics Management College, HQDA/AMC Environmental Conference, and the national conference of the National Association of Environmental Professionals.

Hazardous Waste Minimization. The 1984 Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act resulted in comprehensive EPA regulations, promulgated on 15 July 1985, which required the hazardous waste (HW) minimization generator to certify the creation of a hazardous waste minimization (HAZMIN) Program. Since February 1983 AMC had formally listed the reduction of HW as its first HW management priority, the new EPA regulations introduced the need to centralize and prioritize AMC's local HAZMIN efforts.

In September 1985, General Thompson directed the AMC Engineer to develop a comprehensive command hazardous waste plan. The AMC HAZMIN Plan outlined actions that AMC will take to reduce its HW generation and how it will manage the HW it generated. The goal was to reduce the 1985 HW generation level by 50 percent by 1992. By the end of CY88, AMC had reduced its HW generations by 32 percent. Indirectly, the AMC HAZMIN Plan was intended to demonstrate to regulatory authorities the command's awareness that HW must be managed properly and efficiently.

Responsibility for HW reduction efforts was not given to HW generators alone in AMC's HAZMIN Plan, but rather to all parties who could affect AMC HW reduction efforts. The HQ AMC HAZMIN Board had been established 1 June 1986. This interdisciplinary group, formed from HQ AMC DCS's, separate office chiefs and chaired by the AMC Chief of Staff, advised the Commanding General about HAZMIN progress and advocated AMC HAZMIN actions. AMC-R 14-46, *U.S. Army Materiel Command Hazardous Waste Minimization Board*, formulated the activities of the Board. In addition, the regulation established 3 working groups (Incentives, Productivity Projects, Technology Transfer) to be the functional arm of the board. The board met during FY89 in November, March, and September.

Two technical assistance contracts addressing solvent reuse and electroplating waste minimization were also sponsored by the AMC Engineer to support installation efforts in reducing their HW generation. These studies resulted in 48 HAZMIN projects funded by the Defense Environmental Restoration Account

³⁷Bulletin 89-2, DCSN, Jul 89.

(DERA) between FY86 and FY89. The Army Environmental Hygiene Agency surveyed 21 active HW generating installations and prioritized the actions which best promoted HW reduction and the actions required to reduce HW even further. A total of 25 AMC installations were undergoing indepth HAZMIN surveys by outside contractors. The AMC HAZMIN Workshop held in September 1989 in Idaho Falls, Idaho, was a resounding success with 170 attendees.³⁸

By the end of FY89, 59 installations had issued local HAZMIN Plans of action using the information, guidance and requirements detailed in the AMC HAZMIN Plan. At least \$3.2 million in Environmental Restoration funds had been distributed to the MSC for purchases of HAZMIN equipment. USATHAMA had 12 ongoing R&D projects addressing AMC HAZMIN Research and Development. The DCS for Production revised the Manufacturing Technology (MANTECH) program to compliment the HAZMIN Program. AMC played a pivotal role in the Assistant Secretary of the Army (Research, Development and Acquisition) study to institutionalize HAZMIN in the acquisition process.

Real Property Maintenance Activities Operations. Facilities Division oversaw the operation of real property maintenance activities (RPMA) that supported a wide range of conditions at facilities valued at \$49 Billion.³⁹ Included in these assets were industrial, supply and research facilities which ranged from Civil War era structures to ultra-modern production and testing operations. AMC is struggling to meet minimum requirements for mission performance in facilities badly in need of maintenance and repair, while standing at the forefront of technologies which were associated with the advanced weapon systems for the modern Army.

As in the year before, the overriding concern in FY89 was the significant shortfall of available RPMA funds and the disturbing backlog of maintenance and repair (BMAR) growth, together with an expanding list of "must fund" environmental projects. At best, the FY89 funds barely covered the DEH's annual recurring requirements at most installations, just enough to maintain operations. By the end of FY89, the total BMAR grew to \$356.2M, a 21 percent increase from the previous year. With the continued absence of meaningful funding for basic maintenance and repair (i.e., non-environmental or non-life threatening), facilities were deteriorating to the point that Major Construction Army (MCA) projects were required to restore or replace them.

The RPMA funding shortfall, a growing backlog of maintenance and repair, and a continuing shortage of MCA funds, had serious long-term implications on the maintenance and modernization of the AMC industrial complex, environmental compliance and quality of life. The ultimate consequence will be a reduced capability to support the Modern Army.⁴⁰

Battelle Study. As a follow-on to the Battelle Study of FY88⁴¹, the parameters for a long range MCA strategy plan for AMC were developed. That study revealed an AMC industrial complex extremely old by industry standards, and an ongoing maintenance expenditure about half the industry average. The study estimated an initial "get well" cost of \$7.1 Billion, and an annual "stay well" expense thereafter of \$3.8 Billion, in FY90 dollars. These amounts far exceeded current and anticipated budgets, indicating a need for major changes in resource management practices and priority-setting. As envisioned, the MCA long range strategy will be issued to the field in FY90, and will provide standing guidance on how to:

³⁸Bulletin 89-3, DCSSEN, Nov 89.

³⁹Bulletin 89-2, DCSSEN, Jul 89.

⁴⁰Bulletin 89-1, DCSSEN, Apr 89.

⁴¹See the AMC AHR for FY88, pp. 95-96.

- * Target fund distribution between renewal and replacement projects.
- * Target funds by functional areas.
- * Identify and prioritize the most critical needs, i.e., mission choke points.
- * Institute buyout/buydown programs to mitigate effects of limited funds or maintenance, repair and construction.

An added objective was to establish an AMC database to improve tracking of MSC and installation priorities.

Environmental Problems. Contributing to the RPMA funding crisis was the alarming growth of environmental problems at installations, several of which received formal Notices of Violations, presages of possible fines and jail terms for violators if corrective actions were not taken. Projects to correct the most critical environmental deficiencies were designated Class I and, along with hazardous waste disposal, became "must fund" requirements, which totalled \$51.2M.

To meet this unfunded, critical requirement, much of which required RDTE funds, a major effort was launched in April by the Facilities Division and the DCS for Development, Engineering, and Acquisition to seek congressional emergency reprogramming of that amount. Justification was in the form of projects identified by installations, and in the process of being awarded, were subject to availability of funds. By the end of August, the request had OSD support for the requested amount. At year-end, Congress had approved \$15.9M for FY89 reprogramming, leaving the balance for FY90 funding, since the government was obligated to fund SAF contracts which were not funded in FY89.

Army Communities of Excellence (ACOE). The Facilities Division supported the ACOE Program by hosting a workshop at Fort Monmouth, New Jersey on Expanded Self Help (ESH). The event attracted over 40 representatives from U.S. Army Corps of Engineers and Army installations in the East to share ideas and develop strategies to maximize the benefits to the DEH from this ACOE initiative. ESH was a program to adapt the traditional self help programs common in family housing areas to supplement DEH forces in performing maintenance, repair and improvements to non-housing facilities. The program provided tools, materials and instruction to occupants of those facilities so they could improve their physical surroundings and enhance their productivity. Another key element involving the division was the development of Installation Design Guides to provide visual and functional criteria for installations of excellence.

Funding - Operations (BP19100), M&R(BP192000), and Utilities (BP193000). The FY 1989 AFH Program of \$55 million was the best year in AMC's Family Housing history. This investment effectively extended the useful life of housing units as well as visibly improving the soldiers' quality of life, in terms of kitchen repairs and replacements, bath upgrades, and new heating and air conditioning systems.⁴²

Historical Buildings/Structures/Sites. The DA contract study on historical building/structures and sites was completed. The study indicated there were many family housing units which should have been preserved, but it will be expensive to keep these units in the family housing inventory.

Improvements and Construction. AMC total family housing inventory had 8,443 dwelling units. The project to construct 100 new units at Charles Melvin Price Support Center was on-going. Two sites,

⁴²Bulletin 89-3, DCSN, Nov 89.

Aberdeen Proving Ground and Seneca Army Depot, had improvement projects funded for 106 dwelling units totaling \$3.6 million. Thirty new housing units were completed at Seneca Army Depot at a cost of \$2.8 million. Aberdeen Proving Ground had 439 units of replacement housing constructed at a cost of \$27.7 million.

Base Realignment and Closure (BRAC)

In 1988, the Secretary of Defense chartered the Commission on BRAC to recommend military bases for realignment and closure.⁴³ In December 1988, the Commission issued its report and recommendations, which were subsequently approved by Congress. Recommendations of the report will directly affect 14 AMC activities/installations. Eight installations will be closed, with others scheduled for "realignment." Under provisions of the Base Closure and Realignment Act, Public Law 100-526, AMC must initiate all closures and realignments no later than 30 September 1991 and complete all such actions no later than 30 September 1995. No closure or realignment actions could be initiated before 1 January 1990.

The law further required the preparation and processing of MCA project documentation associated with facility construction and infrastructure requirements to accommodate realigned activities and missions, on a compressed MCA programming milestone schedule. The total program for AMC was comprised of 23 projects at 11 installations, estimated at \$221M, to be accomplished during FY91-FY94.

Environmental requirements to support BRAC were significant, both in terms of scope and resources required. Consideration of environmental impact(s) was one of the explicit criteria of the charter by the Secretary of Defense. The procedural and substantive requirements of two major environmental laws were the thrust of this effort. Foremost was compliance with the National Environmental Policy Act (NEPA). NEPA required federal agencies to assess and document the environmental effects of their (proposed) actions before any actions were initiated. While the base closure statute specified that NEPA would not apply to the actions of the commission (e.g. identification of installations to be closed or realigned), it did require that NEPA documentation be prepared which addressed the environmental impacts of BRAC at affected installations.

A "packaging" approach was developed and utilized, in order that mutually affected losing and/or gaining installations were covered in the same environmental impact statement (EIS) or environmental assessment (EA), thereby addressing the true "cumulative" impacts as required by NEPA. To that effect, five EISs and six EAs covering the affected AMC installations were begun in 1989. Public scoping meetings were held in order to determine the significant environmental issues which needed to be addressed in the documents. The majority of issues raised in the scoping meetings, both in frequency and by site, were related to contamination and cleanup of past hazardous materials/waste sites, and ultimate land "re-use" alternatives. It is critical to note that implementation of BRAC actions cannot be initiated prior to completion of NEPA documentation requirements.

Concurrent and subsequent requirements were those pursuant to the Resource Conservation Recovery Act for cleanup of hazardous waste sites, and as regulated by the Comprehensive Environmental Response, Compensation and Liability Act, commonly known as "Superfund." Contamination issues were the thrust of the focus at AMC installations scheduled for closure and/or realignment. CERCLA required environmental restoration of past contaminated sites. DA policy for BRAC actions was that excess sites will be cleaned up to an "unrestricted" use level, and that the cleanup will be initiated on a "worst first" basis.

⁴³Bulletin 89-1, DCSN, Apr 89.

To that effect, enhanced preliminary assessments (PAs) were initiated for all applicable AMC BRAC sites during 1989. The enhanced preliminary assessments will determine the nature and extent of contamination, and determine those installations where remedial investigations/feasibility studies are needed. Due to the unique missions/functions of AMC installations, large amounts of contamination had been revealed. Requisite cleanup efforts were anticipated to be lengthy and costly, and will require completion prior to the excession of properties.

The Environmental Quality Division, as well as the Facilities Division, was heavily involved in developing (Army-wide) implementing strategies and actions necessary to comply with the varied and comprehensive environmental requirements associated with base realignments and closures. The five-year program will require extensive effort and resource commitment with the Real Estate Division Disposal and Cultural Resource Preservation Programs.

HQ AMC Relocation

The headquarters relocation project as conceived had AMC moving to North Post Fort Belvoir, Virginia, during the FY93 timeframe, into a new facility which would have been built under a third-party lease-purchase contracting agreement. The architect/engineer firm of Daniel, Mann, Johnson and Mendenhall was hired by the Baltimore District Corps of Engineers and completed a 10 percent MCA design which was to be used for the project's Economic Analysis. A second firm was hired by Baltimore District to complete an Environmental Impact Statement (EIS), but the end of the fiscal year only preliminary draft EIS had been completed.

A second initiative which affected this project was the planned development of the Engineer Proving Grounds (EPG) at Fort Belvoir West. This program was being conducted through the office of the Assistant Secretary of the Army (Installations, Logistics and Environment). This initiative will provide 2 million square feet of office space to the Army in exchange for development rights to the EPG land. This office space will be allocated to Army agencies in the National Capital Region, including AMC. Agencies will be housed in new, "rent-free" space instead of continuing to pay expensive leases.

By the end of FY 1989, the final destination for AMC's relocation was undecided. However, it appeared that the Commanding General was leaning toward EPG on the basis of the comparison of costs to the Army (and AMC) for each alternative.

Military Construction, Army (MCA) Program

Congress approved a \$192,550,000 FY89 MCA program for AMC, comprising 25 projects. Two of the projects that cost \$58M were for chemical stockpile disposal facilities at Tooele Army Depot and a chemical demilitarization training facility at Aberdeen Proving Grounds. The package also provided authorization and the first increment of funding (\$10 Million) for the Red River Army Depot Central Distribution Center, with increments of \$39M for each follow-on scheduled in FY90 and FY91.

Energy Consumption

Facility energy, including process consumption, in AMC was reduced 6 percent in FY89 compared to FY88, the most significant one-year reduction since the late 1970's. This decrease reflected a generally mild winter and reduced workload. Several installations excelled in energy management and conservation, as evidenced by the number of "exceptional" ratings given by AMC I&SA during five staff visits. Recognition was bestowed upon installations and individuals by the Commanding General, AMC, for performance in FY88. Indiana AAP received a Federal Energy Efficiency Award from Department of Energy. Other significant initiatives in the energy arena during FY89 were the successful implementation of the Army's first shared energy savings contract at Corpus Christi AD, and the continuing feasibility study of processing

energy reporting in the Defense Energy Information System (DEIS). On 30 September, AMC was on a glidepath to meet and possibly exceed the Army's FY85-FY95 facilities energy goal.

With process operations continuing as a major factor in the energy consumption of many AMC installations, preparations continued to enable those installations to report process energy separately from building consumption, and establish a separate goal based on productivity indicators rather than square feet. In June, those installations updated their FY 85-95 energy data in the Army DEIS Data Entry System (ADDS). Only those installations which could identify a productivity indicator relative to process energy usage were eligible to report process energy in the ADDS. At year-end, only Holston, Louisiana, Sunflower and Radford Army Ammunition Plants; Lima Tank Plant; Tobyhanna Army Depot; Redstone Arsenal; and Stratford Engine Plant were reporting process energy. Efforts were continued in refining the productivity indicators to improve correlation with energy consumed.

AMC Environmental Program

Environmental Quality and Pollution Abatement Program. The Environmental Quality Division (EQD) was responsible for managing the environmental Quality and Pollution Abatement Program. Eleven people (nine professionals) prepared and implemented AMC policy and procedures. These activities involved in Federal, State, and local regulations which affected AMC mission activities. While the Clean Air and Clean Water Acts were the primary costliest cleanup laws of the 1960-1970's, the RCRA, Toxic Substance and Control Act (TSCA), CERCLA, and the Superfund Amendments and Reauthorization Act (SARA) continued to challenge and complicate AMC's compliance and cleanup efforts in the 1980s. AMC EQD developed a PC based Environmental Information Center (EIC), which accelerated input and output of environmental data such as the Army Environmental Requirements Report (AERR).

Air Quality. The Air Quality Program throughout AMC continued to work without major problems and was mostly controlled by State Implementation Plans individually administered by State or Local authorities. As with the remainder of the air pollution control community (both regulators and regulatees), AMC awaited the final enactment of overdue amendments to the Clean Air Act. There were no significant air pollution source problems in 1989.

The Clean Air Act (CAA) excluded military combat vehicles from any emission regulations. In addition, Section 203 (b)(1) of the CAA allowed the Environmental Protection Agency (EPA) to exempt motor vehicles or engines for reasons of National Security. A National Security Exemption (NSE) for 4,100 replacement engines (20,500 were requested) for multifuel 2 1/2 and 5 ton trucks was granted by the EPA on 30 September 1987. On 22 December 1987 TACOM revised their NSE package to request the exemption of 1600 additional 2 1/2 ton engines for CY88. This was forwarded to EPA on 4 February 1988 and on 2 March 1988, EPA granted the exemption 2700 more engines (1600 plus 1100 not used on the 5 ton exemption).

On 25 and 26 May, representatives from EPA and TACOM met to develop guidelines for NSEs to cover the total DA Tactical Vehicle Fleet (TVF). Specifically, these guidelines will allow DA to plan for future procurement of military tactical vehicles and replacement engines consistent with Section 203 (b)(1) of the CAA. By letter, dated 4 October 1988, EPA granted an NSE for 31 different vehicles/engines in 1988 and provided guidelines for future NSEs. This precedent-setting agreement required TACOM to develop instructions for contractors to implement the EPA requirement, which HQ TACOM did by a Procurement Information Letter dated 9 January 1989 and a Commanding General's Policy Memorandum, 1-89, dated 10 January 1989. The development for the Army/EPA agreement was a significant contribution to the future of the Army's Tactical Vehicle Fleet and should eliminate case-by-case exemption requests.

Water Quality. Under the Clean Water Act, installations with points discharging directly to the waters of the U.S. were required to obtain a National Pollutant Discharge Elimination System (NPDES) permit.

The NPDES permit was a legal enforcement document containing discharge limitations for specific pollutants. Under these permits, installations were required to develop and maintain wastewater monitoring programs to ensure compliance with the permits and regulations. The EPA focused attention on reducing toxins from point sources, thus incorporating toxic monitoring in newly issued NPDES permits.

The Army Environmental Hygiene Agency conducted bio-monitoring studies and toxicity reduction evaluations at some AMC installations during CY88 and CY89. The issuance of new NPDES permits had become a concern at some AMC government owned/contractor operated installations, in which EPA wanted to issue the permit to the contractor instead of the Army, as previously done. A legal decision was still pending. AMC continued to support efforts to clean up the Chesapeake Bay as outlined in the DOD-EPA Joint Initiative on the Chesapeake Bay.

Installation Restoration Program. AMC continued to take the initiative and demonstrate leadership in cleaning up contamination from past installation activities in accordance with the Installation Restoration Program Policy guidance issued in September 1987 by Mr. John Shannon, Assistant Secretary of the Army (Installations and Logistics). The program addressed 1,391 documentation needs for Army installations with environmental contamination at sites from CONUS, Hawaii, Alaska, and Puerto Rico. The annual program budget was more than \$204 million in FY89. The Army accomplished its goal of completing Preliminary Assessments/Site Investigations by the end of FY89 and it expected to complete Remedial Investigations/Feasibility Studies by the end of FY92.

Under Section 105(e) of the CERCLA the EPA was required to develop a national inventory of hazardous waste sites. The uppermost part of the list is known as the National Priority List (NPL).⁴⁴ The process required that a site be first proposed and later nominated for the NPL. The AMC sites on the NPL are listed below, those with an asterisk having been added in FY89:

*Aberdeen PG (Michaelsville Landfill)	Milan AAP
Alabama AAP	Rocky Mountain Arsenal
*Anniston AD	Sacramento AD
Cornhuster AAP	*Savanna ADA
Joliet AAP	Sharpe AD
Lake City AAP	Twin Cities AAP
Letterkenny AD (PDO Area)	Umatilla AD
*Louisiana AAP	

Additional AMC Installations proposed for inclusion (those with an asterisk were added in FY89)⁴⁵ were:

Aberdeen PG (Edgewood Area)	*Picatinny Arsenal
*Iowa AAP	Riverbank AAP
Lone Star AAP	*Seneca AD
Longhorn AAP	

The 1986 Superfund Amendments Reauthorization Act required, under Section 120(e), the development of an Interagency Agreement (IAG) between Federal Facilities and the EPA which spelled out technical and legal procedures by which a Remedial Action would be implemented at a Federal Facility on the NPL.

⁴⁴Bulletin 89-1, DCSen, Apr 89; Bulletin 89-2, DCSen, Jul 89.

⁴⁵Bulletin 89-3, DCSen, Nov 89.

All the existing AMC IAGs were signed in FY89 except for the IAG for the Twin Cities Army Ammunition Plant which had been signed in FY87. The facilities with IAGs are listed below:

Aberdeen Proving Ground	Rocky Mountain Arsenal
Joliet AAP	Sacramento AD
Lake City AAP	Sharpe AD
Louisiana AAP	Twin Cities AAP
Milan AAP	

In the past, Defense Environmental Restoration Account (DERA) funds had been used to extend or construct public water distribution systems. Funds were used to provide permanent treated water supply systems to off-post residents whose drinking water was proven or alleged to have been contaminated by activities at AMC installations; none were completed in FY89. Bottled water was supplied to off-post residences or businesses in the vicinity of the following activities: Letterkenny, New Cumberland, Tobyhanna, and Sacramento Army Depots, and Rocky Mountain Arsenal.

The Installation Restoration Program continued to grow. FY89, DERA funds were used to perform restoration projects at a total of 38 AMC installations, as follows:

Aberdeen PG	Picatinny Arsenal
Alabama AAP	Pueblo AD
Anniston AD	Radford AAP
Badger AAP	Redstone Arsenal
Cornhusker AAP	Red River AD
Dugway PG	Riverbank AAP
Harry Diamond Labs (Blossum Point)	Sacramento AD
Iowa AAP	Savanna AD
Joliet AAP	Seneca AD
Lake City AAP	Sharpe AD
Letterkenny AD	Sierra AD
Lex Blue-Grass AD	Sunflower AAP
Lone Star AAP	Tobyhanna AD
Longhorn AAP	Tooele AD
Louisiana AAP	Twin Cities AAP
Materials Technology Laboratory	Umatilla AD
Milan AAP	Volunteer AAP
New Cumberland AD	White Sands Missile Range

Army Environmental Requirements Report. The Army Environmental Requirements Report (AERR) was a five-year environmental master plan which summarized pollution control actions and solutions consistent with all applicable standards. The AERR informed EPA of Army actions to comply with environmental laws. The Army had instituted many changes to the mechanisms for identifying and resourcing environmental requirements. The USATHAMA had automated data collection in the AERR reporting system, and the AMC Fall 89 submission of the RCS-1383 Report was completed using the automated data program. A major effort was made by all installations, MSCs, and HQ AMC to ensure completeness and validity of the submission.

Environmental Noise. The purpose of the Army Installation Compatible Use Zone (ICUZ) program was to safeguard installation mission capabilities from off-post encroachment. Chapter 7 of AR 200-1, 15 June 1982, and AMC supplement 1 to AR 200-1, 1 February 1983, implemented the ICUZ Program. The ICUZ program required the development of noise zone contours at those installations generating sound from aircraft operations, weapon firings, munitions detonations or other excessive noise activities. It further

required identification and analysis of incompatible land uses and, if necessary, development of agreements with local communities. This requirement must be documented in an ICUZ analysis study for each installation generating significant environmental noise.

At the end of FY89, 47 AMC installations had been identified as needing a complete noise contour map, and 40 installations had completed this requirement. A further 30 installations generated no significant environmental noise and had no requirement for noise contours or an ICUZ analysis study. Compliance with the ICUZ requirements (i.e. revised initial ICUZ studies and conduct public programs) will be an ongoing requirement for the next several fiscal years.

The AMC Environmental Quality Division held ICUZ training for 42 representatives of AMC installations in Denver, Colorado from 24-27 July 89. This training covered ICUZ contours, site specific analysis of community noise laws, land use requirements, and public involvement techniques. The training was well received by Environmental Coordinators, master planners, legal, PAO and training personnel. These people were responsible for completing their installation ICUZ study six months after the ICUZ training.

By the end of FY89 the final 10 AMC installations were scheduled to complete their ICUZ analysis studies in order to comply with the Assistant Secretary of the Army for Installations and Logistics memorandum requiring their completion by the end of FY89. Unexpected delays were encountered and the new suspense was the end of FY90. This was contingent upon timely on-site monitoring at installations by the U.S. Army Environmental Hygiene Agency's (USAEHA) Bio-Acoustics Division at six installations.

Resource Conservation and Recovery Act. The management of hazardous waste was regulated by RCRA and the Hazardous and Solid Waste Amendments of 1984. There had been an increase in emphasis by the EPA to monitor Federal facility compliance with RCRA. The EPA policies had developed enforcement strategies that would seek to enter into Federal Facility Compliance Agreements (FFCA) within 120 days of any RCRA violation. One of the ways EPA accessed RCRA compliance was with the Hazardous Waste Data Base (HWDMS). DOD was in the process of making this system available to the different services. AMC provided updates to this database to ensure that the EPA could verify or amend the compliance data to reflect current and accurate information.

A major milestone affecting AMC's operations dealing with the management of hazardous waste was the submission of applications for RCRA Subpart X permits. These permits were for the Hazardous Waste Management Systems, and Standards for Owners and Operators of Miscellaneous Units. One of the areas within AMC to which this classification applied was open burning and open detonation (OB/OD) operations.⁴⁶ The submittal of the application allowed the continued operation under interim status until a final determination was made on the permits. The discharges from OB/OD operations were a concern due to the requirements of both RCRA and the Clean Air Act (CAA).

Deactivation furnaces and explosive waste incinerators were being upgraded to meet RCRA requirements. These units were used for the demilitarization of small arms, primers and fuses that, when disposed of, were classified by the EPA as hazardous waste. Based on evidence submitted, EPA changed the classification of many of these items to non-hazardous. The engineering design and procurement of equipment for the upgrades were being managed by the Ammunition Directorate at Tooele AD and were to be completed during FY90.

Toxic Substance and Control Act. The major impact of the TSCA on AMC activities was in the regulation of operations concerned with PCBs. Efforts centered on compliance with storage, handling and

⁴⁶Bulletin 89-1, DSCEN, Apr 89.

disposal regulations. While not regulated as hazardous waste, these materials were included as an area of interest in the ongoing environmental audit program.

Radon Reduction Program. The Army established the Radon Reduction Program (RRP) on 21 March 1988 with the publication of HQDA Letter 40-88-3. The program required that buildings owned and leased by the Army be tested for radon. It further required that remedial action be taken for indoor radon levels higher than 4 picocuries per liter (pCi/L) of air. The Army plan called for 100 percent testing of its buildings by FY91 and complete mitigation efforts by FY97. Installations were responsible to fund, execute, document and manage their monitoring and mitigation efforts based upon the DA Radon Program. Installations were also required to monitor the use of detectors and analytical services purchased through centrally awarded and managed contracts by the U.S. Army Engineering and Housing Support Center (EHS). Mitigation efforts will be based on radon concentrations detected during the testing period with remedial actions required within one month at high levels.

AMC guidance issued on 17 November 1988 included: required steps to ensure accurate and efficient placement of the detectors; public notice of the proposed testing to installation personnel; regulatory protocols; data management; and record keeping. Additional AMC guidance with HQDA and Office of the Surgeon General coordination had been provided to installations requesting a modification to the required testing period, and to MSCs on testing for igloos, wherry housing and GSA leased buildings. The first testing period began during the 1988/89 heating season but late detector procurement contract awards by EHS delayed the testing at some installations. By July 1989, a total of 14,500 detectors had been ordered by 45 AMC installations.⁴⁷ A progress report on the radon program status of AMC installations will be required from the MSCs by February 90.

Underground Storage Tank Program. Final Federal Regulations on Underground Storage Tank Systems (UST) were published on 23 September 1988 by the EPA. These regulations became effective on 22 December 1988, and will require extensive and costly changes in UST systems at many AMC installations. Requirements for systems provided for the installation of new tanks systems and the closure and removal of existing systems from the ground. Installations were required to fund projects and comply with all requirements under the federal, state and local UST regulations.⁴⁸

AMC provided HQDA UST policy guidance to the installations on 21 December 1987. The guidance included inventory and notification requirements, leak detection and tank system testing, remedial actions for leaking and abandoned USTs with removals of abandoned USTs required not later than 1992, construction criteria for new POL USTs and funding. AMC provided DERA funding guidance to MSCs on 29 November 1989 for UST program actions eligible for DERA funding.

The Army Construction Engineering Research Laboratory (CERL) was in the process of modifying and updating the Army UST database. On 1 August 1989 AMC requested the installations to update the UST information previously provided to CERL. AMC was scheduled to forward the information in October 1989 to CERL, which was responsible for gathering all the Army data to prepare the Army UST Inventory.⁴⁹ Project funding requests from AMC installations for FY90 included approximately \$23 million for UST work.

⁴⁷Bulletin 89-2, DCSN, Jul 89; Bulletin 89-3, DCSN, Nov 89.

⁴⁸Bulletin 89-3, DCSN, Nov 89.

⁴⁹Bulletin 89-1, DCSN, Apr 89.

Environmental Training. The Army had a very comprehensive and up-to-date environmental training program, offered by AMC's Army Logistics Management College. The eight environmental offerings were: A Basic Environmental Coordinator's Course (10 days), NEPA Implementation Course (5 days), Manager's Environmental Coordinator's seminar (4 days), Defense Hazardous Materials/Waste Handling course (5 days), Executive Environmental and Hazardous Materials Course (3 1/2 days), and the Defense Hazardous Waste Workshop (3 days on-site only). The Environmental Management Committee (EMC) at ALMC was authorized a chief, six professional instructors and one secretary. This included two instructors in the Historical Black Professor Program. The chief of the EMC at ALMC was Mr. William Hamilton.

The Defense Hazardous Material Handling Course was originally developed and presented by the Army Logistics Management Center at Ft. Lee, Virginia for DLA during FY82. It was offered in FY83-89 in residence and on-site to AMC, other Army, other service, other government, and contractor personnel. The revisions to ALMC environmental courses in FY86-89 brought about flexibility in course material, modernization of generalized blocks of instruction, separation of target audiences and variability in modes offered. The courses were offered in the resident, on-site, satellite, and accredited off-campus instructor modes.

During FY89 the ALMC EMC taught 3,852 students in its eight environmental courses, having conducted 183 classes. Of special merit was EMC's addition of 119 unprogrammed classes to the FY89 schedule. This excluded further offerings by correspondence. Of these, 32 percent were from AMC. Thus, AMC personnel are taking advantage of the management, logistics and environmental offerings of ALMC. This was largely due to the proactive publicity given their courses by the EQD through TWXs, letters and Army Training Requirements and Resources System. The annual review of environmental courses was held at ALMC on 21 September 1989 and was attended by HQDA, AMC, USATHAMA and other MACOM representatives.⁵⁰

Environmental Quality Awards. Outstanding achievement of installations and individuals through excellence in environmental programs and superior leadership was recognized annually by the Secretary of Defense Environmental Quality Awards Program. Competition in the program was voluntary, and required substantial effort on the part of all nominees. AMC received 14 installation and 7 individual entry narratives for the CY88 Secretary of Defense Environmental Quality Awards Competition. DA award winners were Tooele Army Depot, and Mr. Ronald M. Grant at Anniston Army Depot. Lake City Army Ammunition Plant was selected as the runner up for the Installation Competition. Tooele Army Depot was also selected as the winner of the Secretary of Defense Environmental Quality Award, competing with the Navy and Air Force winners.⁵¹

Housing Management

Housing Operations Management System. Approved Housing Operations Management System modules Assignments and Terminations (A&T), Housing Referral, and Billeting, were deployed. Thirteen AMC installations scheduled to receive Housing Operation Management System (HOMES) modules had their systems on-line and operational. The Furnishing and Financial modules were in the developmental stage. The Financial module will operate on a personal computer (PC) similar to the Billeting module. The PC versions of the other three modules were planned for development and deployment to "smaller" installations, if economically feasible.

⁵⁰Bulletin 89-3, DCSN, Nov 89.

⁵¹Bulletin 89-3, DCSN, Nov 89.

The report generator program was developed and integrated into HOMES. It was being distributed to installations as the Housing Report Generator (HRG). The HRG was deployed to eleven AMC installations in 1989 and additional installations will receive the housing report generator in 1990. The HRG will be distributed to any installation, recommended by a MACOM, that is required to submit DA and DD Housing Report Forms. This program will not supersede the HOMES program which had been deployed. HRG deployment and training for all reporting installations will be accomplished in early FY90.

Housing Management Training. Twelve Army Housing Management Courses were presented by the EHSC training staff. Ninety-five AMC personnel received training at these courses. Three of the courses were Executive Level training courses for housing managers.

McKinney Act

McKinney Act (Housing for the Homeless) actions changed materially during the year. As a result of a court action against the U.S. Government, action reports with short suspense dates and workloads at both HQ AMC and AMC field elements were multiplied. This was a significant on-going trend toward increasing non-military utilization of military installations. This particularly affected AMC because of its industrial facilities. Utilization issues will increase over the next several years.

Cultural Resource Preservation

Cultural resource preservation moved forward in AMC during the fiscal year, exceeding the 10 percent goal increase at a number of installations with historic preservation plans by achieving a 27 percent increase.

Organizational Efficiency Review/Manpower Staffing Standards System

A different approach to speed the process of developing manpower staffing standards for director of engineers and housing (DEH) organizations was introduced by FORSCOM, acting as the lead command for HQDA. It combined the Organizational Efficiency Review (OER) and Manpower Staffing Standards System (MS-3) for the purpose of developing a Most Efficient Organization (MEO) and manpower allocations for DEH functions, starting with management and administrative positions.

The data gathering and analysis phase was completed in FY89 and, with respect to AMC DEH operations, produced little of value. With many of the FORSCOM work factors being inconsistent with AMC's operating environment, it was necessary for the Facilities Division to work closely with installations, the Force Development Division in the DCS for Resource Management, and the Management Engineering Activity (our link to FORSCOM) to ensure that the command's unique workload and missions were properly recognized. This process will continue beyond FY89.

Integrated Facilities System-Micro/Minicomputer

Under the guidance of this division and AMC Installations and Service Activity, and with support from the U.S. Army Engineering and Housing Support Center (EHSC), efforts were continued to bring AMC into the Integrated Facilities System-Micro/Minicomputer (IFS-M) scene with the rest of the Army. As EHSC was nearing acceptance testing of the IFS-M system, initial steps were taken to develop software to interface AMC's cost accounting systems with the standard army system on which IFS-M was based. As the year ended, the first of the AMC systems, Standard Operations and Maintenance Army/Research and Development System (SOMARDS) was being implemented. The Army-wide fielding of IFS-M, beyond the test bed site at Fort Eustis, Virginia was scheduled to start early in FY90, with the Adelphi Laboratory

Center planned as the first AMC site. IFS-M was basically a standard automated information system for the installation DEH.⁵²

Headquarters Installation Support Activity

Mission and Organization

In August 1987, the command proposed the establishment of the Headquarters Installation Support Activity (HISA) as a separate reporting activity. On 29 November 1988, the Department of the Army disapproved an AMC concept which would have established HISA as a separate non-Army Management Headquarters Activity (AMHA). The review of the proposal by HQDA indicated that the technical and operational services the command had requested to be moved from AMHA were essential to the operation of headquarters and were in direct support of HQ AMC, according to DOD Directive 5100.73.⁵³

Colonel James P. Hunt, HISA Commandant since 15 October 1987, retired on 31 May 1989. Colonel Lewis R. Heffner replaced him on 1 June 1989. The Headquarters Safety function with one space was transferred from the Office of the Commandant to the Support and Equipment Management Branch of the Operations and Support Division on 24 September 1989.⁵⁴

Civilian Personnel Office

Model Civilian Personnel Office Project. The Headquarters Civilian Personnel Office was designated as a "Model CPO" in April 1986. This project was designed to ascertain if better service and higher productivity would result if the office was staffed 100 percent according to Manpower Staffing Standards System (MS3) requirements, if badly needed automation was obtained, and if facilities were improved. In May 1989, the final evaluation of the project was completed. Efforts devoted to this project resulted in greater management support and improved relations between the CPO and its customers.⁵⁵

CPO Staffing USASAC. The HQ CPO established a new civilian personnel staff/operations servicing component for USASAC in May 1989. Under a memorandum of understanding between HQ CPO and USASAC, this component provided expanded staff and operating service in personnel program administration for USASAC activities located in Alexandria, Virginia, and New Cumberland, Pennsylvania.⁵⁶

⁵²Bulletin 89-3, DCSEN, Nov 89.

⁵³Director of Force Programs Integration, ODCSOPS to CG, AMC, 20 Sep 88, subj: Concept Plan for HQ HISA.

⁵⁴HISA Historical Submission, FY89. Hereafter, all information for this section is from this source unless otherwise indicated.

⁵⁵AMC HQ CPO Memorandum for The Director of Civilian Personnel, Office of the DCS for Personnel, 21 May 1989, subj: Assessment of Model CPO Project.

⁵⁶MOU between HQ CPO and USASAC, 23 May 89, subj: Staff Support provided by HQ CPO to USASAC.

Affirmative Action. Significant progress was made in the placement of handicapped and severely handicapped individuals. HQDA also established an employment goal of two percent of the work force that would be composed of severely handicapped individuals by 1992. In FY89 AMC accessioned 10 percent of handicapped versus a DA goal of four percent and accessioned 7 percent of targeted severely handicapped versus a DA goal of 1.5 percent.

As a result, there were 185 (8.58 percent) handicapped employees and 49 (2.27) severely handicapped employees by the end of the fiscal year. The severely handicapped representation already exceeded the 1992 goal of two percent.

Training and Development

Personnel Management Initiatives. After supervisors and managers attended the Supervisor Development Course, they were required to take the training again. The one-time requirement prevented some personnel from learning the latest management changes. For this reason, a one-day Personnel Management Initiatives class was developed and six were conducted for deputy chiefs of staff/separate offices. Each class was tailor-made and topics covered a wide spectrum of civilian personnel issues.

Secretarial/Clerical Orientation. In an effort to bring newly hired secretarial/clerical employees into the mainstream of administrative, building and operational functions of the headquarters, a Secretarial/Clerical Employee Orientation Course was developed. The one-day quarterly orientations covered all administration functions and services from mail room operations and requesting audiovisual support to preparing time cards, messages and travel orders.

Army Management Staff College Orientation. As a result of extremely critical evaluations of the civilian phase at the Army Management Staff College (AMSC), a pre-arrival orientation phase was developed. It requested that each servicing CPO, with personnel attending AMSC, provide the selectees an orientation about personnel management prior to their arrival at AMSC. There were two orientations for those attending the college.

Training for Handicapped Employees. Three training classes were conducted for hearing impaired employees. Two classes on personnel computer software (MS-DOS and Enable) and one on Professional Development for Administration.

Total Quality Management (TQM) Training. Heavy emphasis on TQM prompted the development of several programs. The DCS for Personnel requested an on-site TQM class for his managers and supervisors which was conducted by the Army Management Engineering College. The Command Group requested training for senior executive service personnel and general officers within the headquarters, which was conducted by the University of Tennessee for 42 of them.

Learning Resource Center. The Learning Resource Center was opened and operated under a contract with A/S/K Associates of Lawrence, Kansas. Training was provided to 3,057 participants attending 147 classes, for a total of 2,852.25 hours of instruction. This was a viable means of training, saving the command the expense of travel and tuition costs.

Union Negotiations

Contract negotiations commenced between HQ AMC and the National Federation of Federal Employees (NFFE), Local 1332 in April 1989. An agreement was reached on all contract provisions except one. The remaining issue concerned civilian (grade) and military (rank) equivalency in the completion of civilian performance appraisals. This delayed the signing of the contract. Major issues addressed during

contract negotiations included expanding the existing credit hour program, smoking, merit promotions, grievance procedures and office time.

Frequent Flyer Program

The program prerequisite for enrollment in this program was changed from positions that required travel six or more times per year to two or more times a year outside of the continental United States and six or more times a year within the continental United States. The enrollment rose from 350 to 500 participants and the command received five free tickets at an average cost of \$400 per ticket.

Operations and Support

AMC Building Fire Safety. Early in 1989 the City of Alexandria Code Enforcement Office began monthly inspections of the building. Fifteen years of neglect resulted in fire and safety risks and the Alexandria Fire Marshal threatened to close the building. Violations included leaving fire doors open, trash and ashtrays in hallways, damaged or missing ceiling tiles, wires and cables suspended from ceilings, fire extinguishers not mounted, combustible storage in office space, electrical cords posing tripping hazards, and use of unauthorized electrical extension cords. Extensive corrective action was taken and by June 1989 the inspections were reduced to quarterly inspections. Unprecedented cooperation from management at all levels and the entire work force was responsible for significant improvements to safety and quality of life in the building.

Revised Civilian Overhire Policy. On 19 October 1988 the Chief of Staff revised the policy on civilian overhires to allow managers more flexibility in maintaining their authorized strength. With available funds under the new policy, managers were authorized to hire against validated positions, either authorized or required, provided they did not exceed their civilian authorization for more than two months. Managers who exceeded their authorization lost their recruitment authority until their DCS or separate office returned to the authorized level.

HQ AMC Civilian Hiring Limitation. The implementation of revised civilian personnel policy increased the total strength to 98 percent of authorization. Based on the May 1989 DA Program Budget Guidance (PBG), it appeared that headquarters would be able to fund 92 percent of the FY90 manpower authorization. In an attempt to lower on-board strength at the beginning of FY90 to a level where personnel could be paid, the Chief of Staff approved a total civilian hiring freeze on people outside of the headquarters, exceptions to be approved on a case by case basis. By the end of the fiscal year, the on-board strength level was reduced to 95 percent of authorization. This hiring freeze was scheduled to continue into FY90.

ADPE Property Accountability. A significant completion of cataloguing and accountability of Automated Data Processing Equipment (ADPE) posted in the HQ AMC Property Books was accomplished in March 1989. This project ended a long standing accountability problem within the headquarters. Accountability of this single commodity was approximately 50 percent or \$6.5 million of the total property book value of \$13 million. With constant upgrades and enhancements to ADPE, it was a difficult asset to manage and required constant liaison and coordination with the DOIM to keep ADPE accountability at the highest possible level.

Safety

Several significant problems existed within the headquarters during FY89. Supervisors and managers were inundated with power failures and other safety problems. Through the efforts of managers and the employees adhering to safety precautions the command was able to eliminate many problems such as the

hazards of malfunctioning fire doors and faulty wiring systems. Their efforts ensured compliance with National Fire Protection Association building codes and standards.

Workman's Compensation. An immediate concern was the removal of ineligible names from the compensation claim list. With some of the past obstacles removed and erroneous data corrected, information from HQ CPO fostered more concentration on managing the Workman's Compensation Program. Six of the new cases in the FY89 total were validated by medical cost. Two of the six cases generated medical costs directly from injuries sustained from malfunctioning AMC building elevators. Five other cases did not produce costs against federal funds, and six additional cases were long-term compensation cases that may include medical costs. This fiscal year was the most successful in terms of reflecting more accurately the accident experience within the headquarters.

Safety Program Policy. Pertinent safety management policy procedures were included in the AMC Supplement 1 to AR 385-10. The final draft was held in abeyance pending the printing of the negotiated agreement/memorandum of understanding between HQ AMC and NFFE, Local 1332.

Joint Safety Committee. The Joint Safety Committee was created as a management tool to assist in implementing a safety and health program for headquarters employees. Although the negotiated agreement which established the committee expired in January 1989, the committee continued to function throughout the fiscal year.

DOD Emergency Evacuation Plan. An important Commandant initiative was the realignment of headquarters personnel in accordance to the DOD Emergency Plan. A draft DOD Emergency Plan, providing for the first time written instructions to improve the time required to evacuate the building, was developed and staffed with DOD personnel.

Equal Opportunity

The HQ Equal Opportunity Office was responsible for the establishment of special emphasis programs which included minority employment and the Federal Women's Program. The office received 11 informal complaints and 4 four formal complaints. Seven of the total complaints received were resolved.

Office of the Deputy Chief of Staff for Intelligence

The DCS for Intelligence, headed by COL Ralph C. Gauer, was divided into three Assistant DCS's: Foreign Intelligence, Counterintelligence, and Special Programs.⁵⁷

Most Significant Issues

Human Resource Management. Human resource management was a key issue throughout the AMC intelligence community in FY89. Intelligence and security analysts made up a small, highly specialized subset of the civilian work force, and were critically short throughout DOD. These factors, along with the ever-changing hiring freeze situation, made personnel shortfalls a critical issue, particularly in low density, (i.e., one person deep) specialties. The DOD-wide Civilian Intelligence Personnel Management System (CIPMS) was established to alleviate the shortfalls and assist in the development of intelligence professionals. Several DCSINT personnel played vital roles in the development of CIPMS, to include the development of Army Occupational Guides.

⁵⁷ Unless otherwise noted, the source for this section is the DCS for Intelligence submission for FY89. This source should also be consulted for a classified discussion of an update on TEMPEST policy.

Foreign Intelligence Office. The Foreign Intelligence office was the hardest hit by personnel shortfalls in FY89. Several important functions remained in limbo, including management of the Technical Reconnaissance and Surveillance (TECRAS) Program which was left inadequately supported due to resource limitations. The well regarded "Bi-Weekly" current intelligence briefings for the HQ (initiated in FY88) continued through FY89 with even more complex and extensive topics. By the end of the fiscal year, manpower shortages were causing serious concern over the ability to continue the briefing program.

In the threat support arena, resolution of serious differences between HQ TRADOC's and HQ AMC's view of the proper point for System Threat Assessment Reports (STAR) preparation came late in the year. TRADOC will now prepare the first STAR after Milestone 0, and AMC will prepare all subsequent updates. This should materially assist oversight and management of AMC threat and intelligence support systems. Project "D650", Exploitation of Foreign Items, was successfully accomplished despite an increasingly complex overseas acquisition environment. FY89 saw the first use of a non-DCSINT formal Review Panel with active participation by LABCOM/DCS for Technology Planning and Management, and DCS for Development, Engineering and Acquisition.

Counterintelligence and Security Countermeasures. Progress in the implementation of counterintelligence and security countermeasures programs continued throughout AMC during Fiscal Year 1989. Of particular note were the easing of requirements and simplification of procedures pertaining to the command automation security and TEMPEST programs. Implementation of additional Stilwell Commission recommendations highlighted the command information security program as the use of courier cards and entry/exit inspection programs were initiated.

In personnel security, the command again was able to reduce the number of personnel being granted access to classified material. This program had realized a reduction of over 24 percent since the program began in 1984. The completion of Weapon System Technical Assessments and Advanced Technology Assessment Reports continued on schedule with over 40 reports in varying stages of publication. A major undertaking during the reporting period was the orchestration of the decentralization of Special Security Offices within the command from the Special Security Group to AMC. The transition would not take place until FY91, but planning was well under way.

Lastly, AMC involvement in several treaties and potential treaties with the Soviet Union reached an all-time high. Not only were AMC sites vulnerable to Soviet inspections for the entire Fiscal Year, but several new initiatives on the horizon necessitated an unprecedented amount of planning and coordination to ensure that our assets were adequately protected in each of several possible scenarios.

Special Access Programs. The AMC Special Access Program Oversight Committee (SAPOC) met 11 times during FY89 to review and revalidate the Command's Special Access Programs (SAP). In addition, AMC participated in a special review of SAP RDTE management by the Office of the Assistant Secretary of the Army (Research, Development, and Acquisition) Special Programs Office as part of the Defense Management Review process. Transition from STU-II to STU-III secure communications equipment was largely completed during the year. A system to notify programs of completion of counterintelligence scope polygraphs was implemented as well.

Assistant DCS for Foreign Intelligence (AMCMI-F)

Current Intelligence. The ADCS for Foreign Intelligence continued to provide current intelligence to the command group at HQ AMC. This involved producing a "Black Book" twice weekly, containing current intelligence items at the codeword level. Once a week, as a separate section of the Black Book, AMCMI-F produced a special Science and Technology (S&T) section which consisted of a selection of intelligence items relating to foreign science and technology, technology transfer, and other items of interest involving

both the free world and communist countries. To provide better threat and intelligence support to USASAC, AMCMI-F began a new weekly Black Book section, at the SECRET and codeword level, on foreign military arms sales. AMCMI-F also started to produce a weekly compendium of similar items at the SECRET level for action officers in USASAC not cleared for codeword access.

AMCMI-F also continued to produce special trip books for members of the HQ AMC Command Group traveling abroad. Trip books included information on the terrorist threat assessment, a political-military summary, information on foreign military sales and purchases, biographies of key foreign military personnel, and State Department background notes and/or State Department "culturegrams."

The DCS continued to provide a biweekly intelligence briefing for the staff members of the HQ cleared for access to SECRET material. This briefing was simply called "The Biweekly." The DCSINT created this new product to fill in a possible gap in coverage within the headquarters: while the command group received the HQ AMC Black Book twice a week, the DCSINT wanted to ensure that levels below that of general officer, DCS, or SES were aware of important intelligence items, particularly those relating to foreign science and technology that might impact upon their work. Another purpose was to inform the HQ AMC action officers of the kinds of products, information and help that the intelligence officers of the DCS could provide. The Biweekly was divided into two parts, approximately 15 minutes of short science and technology items usually related to AMC interests, and a final segment of about 15 minutes on a specialized science and technology topic.

Support To Ballistics Research Laboratory (BRL). AMCMI-FT has had oversight for AMC in the establishment of a DA-level funding line in support of BRL's production of computerized target descriptions and ballistic vulnerability assessments. Efforts to obtain funding in the FY90-94 Program Development Increment Package had been ongoing for over two years and were successful. This office was now participating with the U.S. Army Intelligence Agency (AIA) in creating a management and implementation program for the new funding.

Weapons and Space Systems Intelligence Committee (WSSIC). Members of AMCMI-FT and AMCMI-FS had been invited to participate as observers in the Ground Weapons and Systems Subcommittee of the WSSIC, as in the past three years. This forum was attended by analysts and supervisors from Defense Intelligence Agency (DIA), U. S. Army Foreign Science and Technology Center (FSTC), U.S. Army Missile and Space Intelligence Center (MSIC), National Security Agency (NSA), Central Intelligence Agency (CIA), and the U.S. Marine Corps from Quantico. Discussions are at the all-source level and fast breaking, and first-time surfaced items are presented. For AMC, this forum provided an invaluable heads-up for new emerging Soviet systems. It also provides an invaluable interface between AMCMI-F personnel and the intelligence analysis community. Meetings were normally held once a month. This would continue in FY90.

Foreign Materiel Program. In FY89 the Foreign Materiel Program (FMP) activities increased over FY88. The D650 program was developed for the acquisition and exploitation of worldwide advanced technology. In this program, 69 new projects were approved for acquisition and exploitation. Also 22 on-going exploitations were continued. AMCMI had continued involvement in Projects Dome Street, Stadium Clock, Tossing Mane and approximately 40 other classified exploitation programs.

Separate Reporting Activity Management. The two SRAs that reported to the DCS were stationed in Japan and Europe. They continued to support the total AMC community with the production of over 1,200 reports annually on worldwide scientific and technical subjects. The AMC major subordinate commands continued their high level of direct communication with the SRAs and continued to use the information reported by them to support AMC's research and development mission.

Requirements Management. FY89 saw the final creation of a true Requirements Database. The Requirements Manager was now able to effectively monitor the status of AMC Intelligence Production

Requirements (IPRs), Non-Recurring Intelligence Production Requirements (NIPRs), Quick Reaction Requirements (QRRs), and requests for Secondary Dissemination of Intelligence Products. The availability of this database resulted in a sharp decrease in the number of queries from AMC field elements concerning the status of their requirements.

A joint Foreign Materiel/Requirements Management Workshop was held at HQ AMC in November 1988. Its purpose was to discuss problems, seek solutions, and to reinforce the established formats/procedures for submitting requirements and for submitting Foreign Materiel requests. Because of this workshop, the procedural and administrative aspects of AMC requests in the requirements/foreign materiel arena improved greatly. Therefore, AMC requirements were flowing more smoothly through the validation chain and answers were more responsive.

Armor/Anti-Armor Issues. Developments in Armor/Anti-Armor weapons systems and technology continued at a rapid pace in 1989. Although the USSR began reductions in both conventional forces structure and weapons production, the lethality and survivability of its Armor/Anti-Armor systems and maneuver units actually improved.

New or additional information was obtained on current tank models and their variants such as the M1986, M1988 and M1989. The USSR and its Warsaw Pact Allies also continued to improve the capabilities of older tank models by updating them with add-on armor, better fire control systems, improved guns and munitions, and defensive counter-measures.

The USSR continued to improve the lethality of its Anti-Armor munitions, both KE (penetrator) and CE (shaped-charge) warheads, with developments in design, guidance systems, and materials. Armor survivability was also improved by developments in applique armors, reactive armor, and various add-on skirts, plates, and liners.

Although the Soviets may have begun Conventional Arms and Forces Negotiations for political and economic reasons, the actual result may be a greatly improved (although smaller) Soviet armor force. An armor force which has become much more adaptable, efficient and lethal through modernization, a more balanced combined arms mix, and fewer but better manned and equipped units.

The other Warsaw Pact Nations continued to develop their own Armor/Anti-armor systems and production capabilities. These developments usually compliment or supplement Soviet trends.

Armor/Anti-Armor developments in Western and Non-Aligned Nations continued to make evolutionary improvements on existing systems and designs. Of particular note was the emerging capability of several Middle Eastern Nations to produce their own Armor/Anti-Armor systems based on both Eastern and Western designs.

Support for the Acquisition Process. The DCS continued its ongoing support of acquisitions through a variety of briefings and reports to the command group and other key personnel on various aspects of the enemy threat.

System Threat Assessment Reports. System Threat Assessment Reports (STARS), Test Threat Support Packages (TTSBs) and Threat Support Plans (TSPs) prepared jointly by AMC MSC Foreign Intelligence Offices and TRADOC Centers were reviewed and approved or forwarded to HQDA for approval. These included, among others, STARS for M1A1 Abrams tank, Forward Area Air Defense System Line-of-Sight-Heavy (FAADS LOS-F-H), Forward Area Air Defense System Non-Line-of-Sight (FAADS NLOS) and the Enhanced Position Locating Reporting System (EPLARS). The Threat Support Division continued to review and comment on all requirements forwarded to the headquarters for approval.

Army Threat Support Regulation. The DCS was a major contributor to the rewrite and update of the Army threat support regulation AR 381-11, *Threat Support to US Army Forces Combat and Materiel Development*.

Assistant DCS for Special Programs (AMCMI-P)

Polygraph Program. Noteworthy among the polygraph accomplishments was a system to notify Special Access Program (SAP) Managers of those individuals who had access to the program who had completed the polygraph obligation. Throughout the year, AMCMI-P also continued to coordinate with HQDA as various polygraph issues continued to emerge. The ultimate goal was to use the knowledge gained over the past years to assist HQDA in developing a comprehensive polygraph policy.

Secure Communications for Special Access Programs. A total of 188 Secure Telephone Units (STU) III terminals were installed in all locations previously using STU IIs. The totals by command have been set up in a database file which included telephone numbers and locations. Secure datafaxes were installed in a total of 35 units and their locations and telephone numbers were also included in the database for SAP Secure Communications.

Defense Management Review. As a separate effort under the DMR process, ASA(RDA) (SARD-SS) was directed to examine the Special Access Program oversight process to determine if improvements could be made. Several working meetings involving SARD-SS, the DA staff and representatives from AMCDE and AMCMI-P were held in July and August. Thanks in large part to input from AMC, SARD-SS gained significant insight into the extent of matrix support AMC provided to SAP RDTE program managers (as well as support provided to other organizations). SARD-SS concluded that little manpower could be saved through reorganization and its final recommendation was that the current oversight structure was best suited to the management of SAP programs.

Assistant DCS for Counterintelligence (AMCMI-C)

Intelligence Inputs to Weapon System Technical Assessments. The content and format of intelligence inputs to Weapon System Technician Assessments (WSTAs) had been a difficult issue since inception of the WSTA program five years before. The DCS for Intelligence personnel had spent a considerable amount of effort trying to define the nature of the intelligence information required by the WSTA user and by the Army Information Architecture (AIA), FSTC, and U.S. Army Intelligence Threat Analysis Center (ITAC) personnel in order to produce a clear and concise intelligence product that satisfied those needs.

In FY89 the AMC DCS for Intelligence was in the process of coordinating new guidance concerning the development of the WSTA intelligence inputs. While the new guidance did not change the nature of the information required, it presented the requirement to the intelligence analyst in a more comprehensive, easy to understand format. The new guidance gave the analysts an explanation of how and where the information they provided would be incorporated in the finished WSTA, as well as stating the basic intelligence requirement. It was hoped that this would help to improve the quality of the overall WSTA in addition to making the intelligence analyst's job a little bit easier.

Weapon System Technical Assessments Questionnaire. As the WSTA program entered its fifth year, the DCS for Intelligence was preparing to distribute to all WSTA users a questionnaire to be used in evaluating the contribution WSTAs made to the overall Army technology transfer program. The questionnaire requested information concerning the frequency of WSTA use, how and by whom it was used, the clarity and value of the WSTA text and graphics by section, how the text and graphics could be improved to better satisfy user needs, and whether a wider or changed distribution of WSTAs would be more advantageous. The results of the questionnaire would be analyzed and appropriate changes to the WSTA program accomplished during the following year.

Intermediate Range Nuclear Forces Treaty. The INF Treaty entered into force on 1 June 1988. The four AMC sites involved (Longhorn Army Ammunition Plant [LHAAP], Pueblo Army Depot Activity [PUDA], Redstone Arsenal, and Dugway Proving Grounds [DPG]) met the challenge and accepted the responsibility for ensuring successful completion of the AMC INF mission. Inspections, both elimination and short notice, have proceeded without major problems, while the elimination of PERSHING assets continued on schedule.

Lessons learned from the INF experience were being put to use in planning for other treaties currently being worked by U.S. negotiators. Proposed treaties and negotiations that might impact AMC included:

- * Strategic Arms Reduction Talks--An accord to limit strategic weapons.
- * Chemical Treaty--A US/USSR memorandum of understanding for a bilateral verification experiment and data exchange was signed in September 1989 as the first step toward negotiating a comprehensive agreement on the prohibition and destruction of chemical weapons.
- * OPEN SKIES--President Bush's proposal to allow U.S. and Soviet observers to fly over the territory of the other country.
- * Conventional Forces Europe--Reduce agreed upon categories of military equipment in the European theater.

Points of contact had been established at each prospective locality. Work to date involved the collection of data points and the development of verification procedures.

Two INF training videos were completed by the TECOM Combat Systems Test Activity under the oversight of AMC's DCS for Intelligence. The videos, entitled "OPSEC and INF On-Site Inspections" and "The INF Treaty, An Overview," will supplement training required to minimize the impact of time and attrition on AMC's ability to meet its INF responsibilities. To adequately prepare HQ AMC staff duty officers to handle time sensitive notifications pursuant to the INF treaty, a videotaped briefing that outlined possible INF actions and associated procedures was produced. This video was available to the staff duty officers for viewing before they went on duty.

Countering Terrorism. Trip papers continued to be developed for General Officers and Senior Executive Service personnel who were traveling OCONUS. Travelers were provided with the most current terrorist threat information and Secretary of State advisories for travel to selected countries. A travel briefing and associated terrorist threat data was available to all other travelers. Information was updated as received and depicted the current threat situation overseas. Travelers on official government business were required to receive a travel briefing prior to OCONUS travel. Specific travel briefings were also provided to those individuals traveling in groups and to those transferring to AMC facilities overseas.

Exercises. AMCMI participated in two JCS-directed command post exercises (WINTEX-CIMEX and PROUD EAGLE) within the past year by providing dedicated intelligence support and briefings to the command/exercise staff. Intelligence support included coordination with HQDA counterparts on the latest foreign/counter-intelligence activity. Intelligence cells at AMC subordinate activities provided their respective organizations with similar support. Expanded participation was anticipated for future exercises.

Entry/Exit Inspection Program. This DOD-directed program, designed to deter and detect unauthorized introduction or removal of classified material, was implemented throughout AMC during the year. Local SOPs were created and appropriate warning notices were posted. The inspection frequency was to be determined by the local commander (based upon the threat), but at least one was to be conducted each

quarter. Inspections were conducted by security personnel who had been trained in all aspects of the program. No problem areas had been encountered.

Courier Cards. The Courier Authorization Card (DD 2501) program was designed in response to the Stilwell Commission and was based on a recommendation to standardize courier practices throughout the department. Cards were issued and the program implemented command-wide. The cards were valid for one year and allowed personnel to hand carry classified information locally within designated geographical limits. A letter authorization was still required in order to hand carry classified information aboard commercial airlines.

AMC Supplement 1 to AR 380-5. AMC Supplement 1 to AR 380-5, *Department of the Army Information Security Program*, was published in FY89. The supplement provided specific guidance to field activities on information security procedures that are unique to AMC.

Special Security Agreements. Special Security Agreements were used in the industrial security program to allow a corporation under foreign ownership, control or influence to have access to classified information. In the past, these agreements were processed through command security channels. Effective this year, they were processed through procurement channels with input from security personnel. The rationale for the new procedure was to allow procurement personnel to determine if there was a U.S. firm that could provide the desired product or services. AMC input was vital to the study group that proposed the new methodology. A few applications had been processed, and the system was working smoothly.

Decentralization of Special Security Group. The decentralization of the Special Security Group, which should be completed by January 1991, involved turning over operation and control of Sensitive Compartmented Information Facilities (SCIF) and most other assets, including personnel, to the various MACOMs. Within AMC approximately 50 personnel operated the system. Once decentralization was completed, 26 spaces would be allocated to AMC to operate the system. Specific functions that would be absorbed by the MACOMs were SCIF management, information and personnel security, physical security, general security management and intelligence dissemination.

Consideration of Satellite Broadcasting of the "Security in Automated Systems" Course. The U.S. Army Logistics Management College conducted the Security in Automated Systems (SAS) course. The course was taught on-site at Fort Lee and on-the-road at various Army installations. The idea of using satellite broadcasts to teach the course was suggested at the past proponent review but rejected. Although the course was unclassified, much of the subject matter dealt with sensitive subjects. Discussion of communications security requirements, length of passwords, and hacker techniques needed to be considered as sensitive unclassified. So also were specific threats and vulnerabilities and their relationship to the threat against automated systems.

Restructuring the course to eliminate discussions of threats, vulnerabilities, risk assessments, and related matters would change the basic concept of the course. Attendees to a restructured, broadcast course would not receive the same level of training as those individuals who attend on-site courses.

The satellite broadcast network was only partially scrambled, i.e., the video portion was encrypted, but all voice transmissions were in the clear. During classroom discussions of vulnerabilities, many students identify their systems in an attempt to clarify specific weaknesses that must be protected. It would be impossible to guard against this type of disclosure in an unsecured transmission. Thus, the conversion to satellite broadcast would curtail or eliminate sensitive discussions in those specific areas where detailed training and data exchange are most needed and would have an adverse impact on the effectiveness of instruction.

Data Encryption Standard (DES) Requirements. Clarification was received from HQDA on DES requirements for the transmission of unclassified information. Specifically, DES was not required for:

- * Communication with maintenance personnel to coordinate their activities and provide instruction.
- * Communication with manufacturing personnel to provide instructions to start, stop, energize, de-energize, and adjust equipment.
- * Transmission of traffic control information for reporting of accidents, congestion, etc.
- * Communication with medical personnel, such as on-call doctors, to notify them of emergencies.
- * Transmission of unclassified, nonsensitive information in the form of letters, memoranda, information papers, reports, etc., provided the information was not national security-related.

In addition, guard forces required DES-equipped radios only at AMC installations where the local threat analysis identified the need, or when the forces were actually involved in operations that justify the use of such equipment.

As a result of this guidance, the number of waivers requested by AMC activities was drastically reduced.

Elimination of the Personnel Security and Surety Program (PSSP). With the publication of AR 380-67, *Personnel Security Program*, the DCS for Intelligence requested relief from the Automation Security PSSP. HQDA approved AMC's implementation of the Personnel Security Program as it related to designation of ADP I, II, and III position sensitivity. Implementation under AR 380-67 required a number of other changes in the Automation Security Program. AMC Forms 2595 and 2596 were no longer used to document "ADP-sensitive" positions, and statements regarding implementation of the PSSP were no longer required as part of automated system's accreditation documentation. Certain portions of the PSSP, however, were retained. Users of automated systems would continue to be trained in automation security and supervisors had to continue to maintain day-to-day supervisory control over their employees.

Automation Security Working Group (ASWG) Conference Highlights. The annual ASWG conference was held from 28-30 March 1989. About 80 AMC and ISC personnel attended, with FORSCOM, WESTCOM, and HQDA represented. Issues that required resolution include:

- * Development of a network accreditation format. This issue would be resolved upon publication of AR 380-XX. All accreditations would have the same format. Network accreditations would differ only in that the communications security portion would be expanded.
- * Clarification of Data Encryption Standard. HQDA was requested to provide clarification. After HQDA clarification was received, AMC guidance was sent to the field on 3 July 1989. (See above.)
- * Implementation of the Personnel Security Program. HQDA was requested to permit HQ AMC to eliminate the Automation Personnel Security and Surety Program. HQDA responded and has allowed AMC to implement the Personnel Security Program as described in AR 380-67. (See above.)
- * Development of minimum security requirements for contractors processing unclassified sensitive information. In discussions with AMC procurement specialists, it was determined that higher headquarters assistance should be requested. A letter was sent to HQDA, which was forwarded to DOD. Ensuring that contractors included automation security requirements in their contracts was a DOD problem. It had been suggested that the appropriate procurement regulations include standardized wording to cover minimum automation security requirements.

AR 380-XX Initiative. AR 380-380, AR 530-2, AR 530-3, and AR 530-4 were being revised. When republished, all four regulations would be included in one updated publication. Subjects covered in AR 380-XX would include automation security, communications security, electronic security, and TEMPEST. The final draft was being staffed at the MACOM level. The publication date was not known but the estimated publication date was late summer or early fall 1990.

Several major changes would occur when AR 380-XX was released. The length of accreditation would increase to three years and there would no longer be any need to perform accreditation reviews. The two types of accreditation would be generic and operational. Generic accreditations would be developed for all fielded systems. It could also be used for approval of "fielded" systems within a command. Operational accreditations would be developed for single automated systems or grouping of systems with like characteristics. The format for an accreditation document would be as described in the Computer Security Act, Public Law 100-235. The same format would be used for all computer types and for networks.

New classification categories would be used. For unclassified, sensitive information, the term "US1" would indicate unclassified information that required protection from foreign intelligence services and that involved intelligence activities (exempt from Public Law 100-235); while "US2" would indicate unclassified information that may require protection from hostile intelligence services, but that primarily required protection to ensure its availability and integrity.

Physical security requirements would be tied to the size of the system and data sensitivity. Construction requirements were discussed for computer complexes; they would not apply to small systems. Privately-owned computer use was discouraged but permitted for use as remote terminals. It would be necessary to identify those systems that process intelligence information. It had not been decided how they will be identified (e.g., CS1 - WNINTEL); however, the accreditation authority would be based on data sensitivity.

AMC Supplement 1 to AR 380-67, *Personnel Security*. Upon receipt of the new AR 380-67 in November 1988, work began to update the AMC supplement, which was issued on 15 September 1989. Significant changes reflected in that supplement were:

- * Authority to approve emergency appointments, grant interim clearances and designate sensitive positions was delegated to the MSC level with authority to further delegate to chiefs of staff and to the staff element per activity responsible for administering AR 380-67.

- * Interim SECRET security clearances could now be granted to cooperative education program students and student aides.

- * Local commanders could now determine when a National Agency Check (NAC) for unescorted access to restricted controlled areas was required.

- * As of 1 January 1989, all security clearances must be computer generated by the Central Clearance Facility (CCF).

Personnel Security Statistics. A DOD initiative of 1984 established a goal to reduce the number of clearances within DOD by ten percent by end of CY85. AMC met that goal and has consistently maintained a downward trend. As of 30 September 1989, AMC activities had 67,257 personnel with access to classified information, a 1.8 percent decrease since FY88 figures and an overall reduction of 24 percent since reduction goals were established in 1984.

Unescorted Access to Restricted Areas. Since the issuance of the most recent September 1989 version of AR 380-67, *Personnel Security*, the requirement for favorable completion of a National Agency Check

(NAC) to be permitted unescorted access to restricted areas (not involving classified information) had been a controversial issue within AMC. On 14 April 1989, AMC submitted a request for relief from this requirement to HQDA. On 28 April 1989, HQDA responded by permitting local commanders to determine when a NAC was necessary for access to restricted (controlled) areas. AMC maintained that the requirement was still too restrictive and submitted a request through HQDA to the Deputy Under Secretary of Defense for Policy. If granted, local commanders would be permitted to determine when a NAC is required for access to all restricted areas (not involving classified information).

In April 1989, HQDA granted the local commander authority to determine whether a NAC was required for unescorted access to controlled areas. However, the request concerning the authority to conduct NACs for unescorted access to limited and exclusion areas was still pending. Commanders still had to send these requests to the Deputy Under Secretary of Defense for Policy.

Weapon System Technical Assessment (WSTA). Work continued in the development of WSTAs, which are technical assessments of systems and subsystems describing their militarily critical technologies. Within the past year, four additional systems have been finalized, 15 are in technical staffing, and 17 are in draft. To date, 33 weapon systems have been completed. In addition, a program to update WSTAs on a biennial basis has been started. One WSTA update was completed, and three were others were in staffing. As soon as the 1989 version of the Militarily Critical Technologies List (MCTL) becomes available, updating will continue.

A request received from the Office of the Deputy Under Secretary of Defense for Trade Security Policy concerned increased Soviet access to high performance microcomputers through commercial sales. At issue was the release of specific computers and computer chips to the USSR, and what was the current and planned military utilization of these specific items. Through a review of the WSTAs, it was noted that many Army weapon systems made extensive use of commercial microprocessors, and specifically those identified. It was anticipated that a continuous upgrading of Army weapon systems will be through the use of commercial microprocessors.

An AMC task force evaluating for HQDA the political, military and economic impact upon the transfer of Technical Data Package (TDP) concluded that WSTAs were key documents being used at the Project Manager level to provide the basis for many technical recommendations on hardware, software and production, and were relied upon to identify critical technology embedded in Army weapon systems.

Advanced Technology Assessment Report (ATAR). The ATAR effort moved more slowly than anticipated, largely due to ATARs maturing into systems, or WSTAs. ATARs were completed on Image Intensification and the Optical Improvement Program. The latter cuts across all systems utilizing sighting mechanisms. Two other ATARs were under technical review. In FY90, ATARs scheduled for completion include Tunable Lasers, Forward Looking Infrared Sensors (FLIRS), and Military Computing Technology.

Security and Technology Transfer Working Group (STTWG). The STTWG, established under the MOU for the Multiple Launch Rocket System, Terminal Guidance Warhead (MLRS-TGW), has moved ahead in solving such security problems as government-to-government transfer using a designated representative of the U.S. contractor; secure communications using STU II among the partner contractors, to include facsimile; Block List and emergency visit procedures (the method used in this program has been adopted for use for Multinational NON-NATO designated cooperative Defense Programs involving NATO member nations); and development of international shipping procedures for movement of classified hardware among partners.

Foreign Disclosure Program. The new AR 380-10, *Disclosure of Information and Visits and Accreditation of Foreign Nationals*, was received and the AMC supplementation was in the process of being developed.

When published, the AMC supplement would grant most AMC field elements the authority to approve foreign visits and to release information to foreign governments.

AMC continued its philosophy of maximum cooperation with our international partners and allies. This was evidenced by the strong accreditation program (almost 300 foreign officers were accredited to the command), numerous visits to AMC installations by foreign nationals (approximately 5,300), and the multitude of requests received from foreign nationals for AMC information (about 800 requests in FY89).

Policy Compliance Reviews (PCR). The DCS continued its program of PCRs during the fiscal year. Reviews to examine field compliance with DOD, Army, and AMC policies dealing with foreign intelligence, counter-intelligence, and special access programs were conducted at five AMC installations representing four major subordinate commands. Only minor discrepancies were found and none adversely affected the accomplishment of the AMC or MSC mission. During this reporting period, the DCS for Intelligence determined that all future policy compliance review teams should, except in very limited circumstances, be comprised of the respective Assistant Deputy Chiefs of Staff for Intelligence. This change would ensure increased emphasis on the PCR program at both the headquarters and the visited sites.

Civilian Intelligence Personnel Management System. The Civilian Intelligence Personnel Management System (CIPMS) was a statutory excepted service program designed to bring members of the DOD intelligence community into parity with their counterparts throughout the rest of the intelligence community. CIPMS was expected to become effective in early FY90. The system would cover all foreign intelligence specialists within the command and those security specialists who devoted 51 percent or more of their effort to intelligence related (i.e., counter-intelligence rather than law enforcement) functions. Individuals had been identified for conversion; training of program participants and supporting personnel specialists was completed; procedures to effect conversion were in place.

Security Procedures--US/German STINGER Dual Production Program. As the result of a General Accounting Office report, the AMC DCS for Intelligence representatives participated in an after-the-fact Office of the Secretary of Defense effort to redefine and improve STINGER security responsibilities and procedures within the Dual Production Program. The objective was to establish a minimal degree of U.S. security inspection and oversight activity of four foreign program participants after initial bilateral and multilateral documents had been signed.

Although a final determination had not been made, at year's end it seemed unlikely that the U.S. - proposed inspection and oversight activities (that were not specifically provided for under the terms of the Dual Production Memorandum of Understanding or its Implementing Arrangement) would be accepted by the program participants without modification. This experience illustrated the difficulty, if not impossibility, of trying to retrofit more restrictive security procedures into an already executed agreement.

Internal Review and Audit Compliance Office

Organization and Mission

The Internal Review and Audit Compliance (IRAC) Office was transferred on 1 December 1988 from the DCS for Resource Management to a separate entity reporting directly to the Chief of Staff. The manpower authorization remained stable at 10 for the entire fiscal year. Mr. Leonard Maguire, former chief of the Internal Review Branch, became the office chief after the retirement of Mr. Meredith Arthur. The

perceived and actual effectiveness of the IRAC Office was enhanced by the direct control of the Chief of Staff.⁵⁸

During FY89 the IRAC office placed emphasis on followup corrective action needed for significant and material internal control weaknesses, which were identified either by audit or by individual AMC functional offices during their own internal control reviews. Internal Review audits also focused on improving the processes used to select conference sites and to report on the backlog of maintenance and repair of facilities throughout AMC. In addition, a new mission was assumed with the establishment of an internal review plan for Special Access Programs within AMC. Even with the new mission, overall internal review resources declined because of the loss of two overhire auditor positions. The office continued to optimize the benefits that resulted from audits by operating the Audit Alert Network throughout the command.

Internal Reviews

Audit of Conference Site Selection Model (CSSM) Use. A report was issued that summarized the results of reviews made by four MSCs on how well AMC field elements complied with AMC Regulation 1-12, *Sponsorship of Conferences*, dated 3 April 1987. The principal objective was to determine whether field elements were using the CSSM to choose conference sites.

The reviews found that generally the field elements were not using CSSM to select conference sites. As of January 1988, one activity had not implemented the regulation, and use of CSSM at another activity was not implemented until March 1988. Two activities found that controls to ensure use of the CSSM were not effective. Based on results of these reviews, the office determined that all levels of command within AMC had not placed sufficient emphasis on CSSM to ensure compliance. This office recommended that action be taken to ensure that subordinate commands were made aware of CSSM, the requirements for its use, and the potential benefits. The use of the CSSM by subordinate commands was included as a review area during quality assurance/policy compliance visits by HQ AMC personnel.

Review of Executive Dining Room. An audit disclosed that the Executive Dining Room was managed in an efficient and effective manner. Internal controls were in place to adequately safeguard and account for all assets; cash, other assets, and liabilities were adequately managed; and regulations governing the operation of the Dining Room were followed. However, it was noted that in some instances fixed assets were inadvertently expensed and then later capitalized. There was another instance where asset replacement was expended when it should have been capitalized and depreciated. These oversights had the effect of understating the net income derived from dining room operations. Recommendations were made to make corrective journal entries and to ensure future purchases of fixed assets are not expensed, but capitalized and depreciated in accordance with regulations.

Audit of a Special Access Program (SAP). An audit of a SAP program found that correct procedures were followed in obtaining annual revalidation of the program, and procedures were adequate to ensure proper use of resources. However, internal controls in the area of security were not adequate and improvements were needed. Recommendations were made to improve internal controls.

Audit Followup on Material Internal Control Weaknesses. An audit was made to verify actions taken to correct material internal control weaknesses as shown in the FY88 AMC Annual Assurance Statement. The annual statement contained 41 material internal control weaknesses of which 21 were selected for review. Information on the weaknesses was obtained from action officers located in 10 Deputy Chiefs of

⁵⁸Internal Review and Audit Compliance Office Historical Submission, FY89. Hereafter, all information for this section is from this source unless otherwise indicated.

Staff/Separate Offices. The results of the review showed that adequate corrective actions were completed for the 21 material internal control weaknesses.

Audit Followup of DODIG Report on Procurement of Repairable Items Used by More Than One Service. This was the second followup review on the Department of Defense Inspector General (DODIG) report (86-067) to determine the status of corrective actions on five recommendations. The review indicated that corrective actions had not been completed on these recommendations and subsequent followup was scheduled.

Reports on External Audit Followups

An AMC followup report summarized the results of four Army Audit Agency (AAA) audit reports and one Government Accounting Office (GAO) audit report which required corrective action by the DCS for Procurement. The AAA reports were Audit of Contract Administration; Audit of Initial Provisioning-Acquisition and Requirements Determinations; Audit of Methodology Used to Estimate Fiscal Year 1985 Cost Avoidance to Spare Parts Breakout; and Audit of Price Challenge Program. The GAO report was an Audit of Contract Pricing - Material Prices Overstated on Tank Thermal Sights. A review of 45 recommendations contained in the reports found that 32 recommendations had been implemented and corrective actions were complete. The remaining 13 recommendations will be complete after the publication of AMCR 37-60.

Another report summarized the results of a followup on three DODIG audit reports which required corrective action by the DCS for Supply, Maintenance, and Transportation. The reports reviewed were Management of Nonconsumable Items Used by More Than One Service; Controls Over Accuracy of Data in DOD Wholesale Logistics Systems; and Report on Identification and Cataloging of Supply Items. The objective of the review was to determine the status of corrective actions on four recommendations. The results indicated that corrective actions were complete and all recommendations had been implemented.

An Audit Guide, *Backlog of Maintenance and Repair (BMAR)*, was generated by the Command Group's concern with the development of AMC's BMAR requirements. Work on the guide was to be performed at nine AMC subordinate activities. The overall audit objective was to evaluate the BMAR process within AMC. Specific objectives included the evaluation of specificity and consistency of guidance, adequacy of reporting procedures, adequacy of BMAR determination, validity of BMAR requirements, adequacy of AMC's oversight role, adequacy of selected management aspects, and implementation of the Army's Internal Control Program. A summary report on the results of the audits will be prepared.

Audit Alert Network

The Audit Alert Network (AAN) was used to transmit audit findings with possible systemic implications. The findings were forwarded to subordinate commands not included in the original audit for review by their functional staffs. Major subordinate commands were required to provide information concerning whether these same or similar conditions exist within their commands. The following are some of the significant AAN's:

- * An internal review report from an MSC found that procedures used to account for and obtain refunds of federal excise taxes paid on fuels needed improvement. Changes in the law on the method an installation used to pay federal excise taxes on fuel had caused difficulties in obtaining refunds. Five other MSCs experienced the same problem.

- * The U.S. Army Audit Agency (USAAA) found that one activity had not promptly disposed of hazardous wastes. This occurred because effective monitorship and inspection procedures were not in place. Four other activities reported the same or similar problems.

* USAAA also found that the automated system used for processing Procurement Work Directives (PWD) contained outdated and inaccurate information. One other command experienced similar problems.

* DODIG found that additional management and oversight was needed in regards to "merged year" account funds. There were large credit balances for unliquidated obligations, with little or no documentation to support required joint reviews, and inconsistent oversight by command financial managers. One other activity experienced similar conditions.

Semi-Annual IG Report to the Congress

The IRAC office prepared 21 reports covering the period 1 September 1988 through 31 August 1989. The reports highlighted AMC's efforts to emphasize the prevention and detection of fraud, waste, abuse, and mismanagement. AMC IRAC offices operated at a cost of \$10.5 million for the period while issuing 828 reports. The reports contained recommendations that could result in monetary benefits totaling about \$26.4 million, and other recommendations that will improve internal controls, efficiency, and the effectiveness of AMC operations.

Significant External Audits

Quality of Materiel. The USAAA issued a report to AVSCOM and completed its work at CECOM, TACOM, and HQ AMC on a multilocation audit of quality of materiel. The auditors concluded that aggressive action was taken, within available personnel and resources, to improve the quality of materiel. Success was achieved in getting field activities and the DOD contractor community to participate more in the process of identifying and resolving materiel quality deficiencies. New programs were also introduced to ensure that this increased participation was balanced with increased action by the materiel command community. However, many of the actions taken did not fully achieve their objectives. Problems were identified in the Contractors Requiring Special Attention Program and the Holding Contractors Liable Program. Problems were also found in the maintenance and use of a deficient data base system.

Contract Terminations at Army Inventory Control Points. DODIG found that the Army did not have an effective process for making economical contract termination decisions, and the quality of documentation supporting termination decisions and internal control over the termination decision-making process needed improvement. As a result of this audit, Congress cut the Army's OMA budget by \$125 million. AMC initiated many steps to correct the problems disclosed by the auditors, including the establishment of a tracking system to identify savings through contract terminations.

Capital Equipment Program. USAAA issued four reports on the Capital Equipment Program to various depots and one summary report to DESCOM. The auditors found that the Asset Capitalization Program provided a stable source of funds for equipment essential to effective depot modernization. However, they believed that strengthening procedures for justifying and approving capital equipment requirements would help ensure that program funds would be managed effectively and used to acquire only needed equipment. Some of the more common problems involved modernization plans that generally were not properly developed and used to acquire capital equipment; economic analyses that were not adequately validated during the project review process; funds for capital equipment that were adequately controlled but not promptly obligated; and capital equipment that was not acquired cost-effectively.

Hazardous Substances. There was continuous effort by USAAA, DODIG and GAO in this area. Two reports were received that involved AMC activities:

* Letterkenny Army Depot. Plans for protecting the environment from hazardous substances were not complete, and procedures for communicating the potential dangers of hazardous substances to employees were not effective. Hazardous substances sometimes were not properly stored or promptly disposed, and employees who worked with or around hazardous substances were not properly trained.

* Corpus Christi Army Depot (CCAD). During the previous two years, CCAD had emphasized the improvement of managing hazardous waste procedures. Several actions were initiated to improve identification and tracking of hazardous waste, and to develop recovery and recycling programs. However, the Hazardous Waste Management Plan required updating to ensure its accuracy and completeness. The organizational structure needed to be realigned to effectively manage the program. Improvements were also needed in storing and transporting hazardous waste, and in ensuring that the inventory of hazardous waste was properly performed and maintained.

Foreign Military Sales (FMS) Management

USAAA conducted a multilocation audit of FMS management. Audit work was accomplished at HQ AMC, USASAC, New Cumberland Army Depot, AMCCOM, MICOM, CECOM, and TACOM. The audits showed that improved policies and procedures were needed to make sure that the FMS program was properly managed. Specifically, policies and procedures needed to be established for identifying case manager responsibilities within the central case management system, closing older sales cases under the closeout program, and collecting nonrecurring costs on the sales of major defense equipment. Also, bills would be more accurate and timely if the Army had issued a billing handbook and improved automated billing procedures.

Commanding General's Meetings with External Auditors

The Commanding General met with the GAO Army Group and the Army Auditor General in an effort to maintain a positive working relationship with the external auditors. In the GAO meeting on 15 May 1989, GAO discussed the Depot Maintenance Backlog and the Buy Ahead Program. On 4 April 1989 the Army Auditor General discussed several upcoming audits which included the Threat Support to Materiel Development, Army Warranty Program, and Requisition Cancellations and Rejections.

Office of the Special Assistant for Total Quality Management

Mission and Organization

Substantial progress was made in defining the principles of Total Quality Management (TQM), identifying the necessary tools, and increasing management awareness of the guiding principles of TQM. In accordance with basic tenets of the TQM philosophy, initial efforts were made to involve senior level management at both the headquarters and major subordinate commands. As a result of the Commanding General's support, this effort has been successful. Training was also recognized as a major issue during this period. While upper level management was, for the most part, exposed to TQM, it was necessary that all levels understand what it meant to them, and how they were involved in its implementation.⁵⁹

The Defense Systems Management College and the Army Management Engineering College were developing TQM curricula. Based on resource constraints and the need to involve teams rather than individuals, the train-the-trainer approach appeared most promising for AMC. During FY89, some AMC

⁵⁹Office of the Special Assistant for Total Quality Management Historical Submission, FY89. Hereafter, all information in this section is from that source unless otherwise indicated.

activities, notably at DESCOM, initiated impressive TQM efforts. Other AMC organizations established focal points and were beginning to infuse TQM principles into their day to day operations.

During August 1988, the Table of Distribution and Allowances for the Special Assistant for Total Quality Management was approved. In addition to the Special Assistant, the Office was authorized one Quality Management Assessment Specialist position, which was filled in January 1990, and one secretary. The office staff was augmented through the use of a Logistics and Acquisition Management Program (LOGAMP) candidate who was assigned for four months as part of his developmental training. The office planned to continue the LOGAMP assignment. Mr. Stanley J. Alster was appointed as the Special Assistant for Total Quality Management in August 1989.

The internal headquarters infrastructure for TQM was also developed and implemented. The Executive Steering Committee was chaired by the Commanding General, and composed of the Deputy Commanders, Chief of Staff, Chief Scientist, Command Sergeant Major, the Special Assistant for TQM, and MSC commanders.⁶⁰ Executive Steering Committee meetings were held in conjunction with the quarterly AMC Commanders' Conferences. In addition, Management Advisory Boards were established in HQ AMC. These were the Board for Staff Operations that was chaired by the Chief of Staff, the Board for Acquisition chaired by the Deputy Commanding General for Research, Development and Acquisition, and the Board for Materiel Readiness chaired by the Deputy Commanding General for Materiel Readiness. Each MSC also has an Executive Steering Group and Functional Working Groups.

A Staff Operations Working Group was formed to act as the operating arm of the headquarters Management Advisory Board for Staff Operations. Its objective was to assist the Staff Operations Board in identifying cross-functional processes within HQ AMC staff operations, apply TQM principles for continuous improvement to selected processes, and recommend alternatives for achieving process improvement.

TQM Policy

In a 28 November 1988 memorandum, the Commanding General reiterated his strong support and commitment to the concept of TQM and its implementation in AMC. As evidence of his commitment, he chaired the AMC TQM Executive Steering Committee. This memorandum also announced the appointment of Stanley J. Alster as his Special Assistant for Total Quality Management.

On 6 January 1989, HQDA established the Army Total Quality Management Committee (ATQMC) to assist the Undersecretary in development of guidance, policy, methodology, programs and products to guide and support TQM implementation. The committee also provided a forum for the exchange of ideas, lessons learned and coordination of activities.⁶¹ General Wagner represented AMC on the ATQMC and attended the first meeting on 26 May 1989, accompanied by his Special Assistant for TQM. At the second meeting on 7 July 1989, the Undersecretary directed AMC and TRADOC to brief their experiences and lessons learned with TQM training at the next meeting.

HQDA issued the Army TQM Implementation Plan for Acquisition in October 1988.⁶² The AMC Implementation Plan was approved by the Executive Steering Committee, and issued in July 1989. The AMC plan functionally supported and was modelled after the Army Plan, but went beyond the Army plan

⁶⁰Charter of the AMC Executive Steering Committee for TQM Implementation, 22 March 1989.

⁶¹Memorandum, GEN Wagner to Distribution, 18 July 1989, subj: AMC Implementation Plan for TQM.

⁶²HQDA, Army TQM Implementation Plan for Acquisition, October 1988.

in encouraging across the board implementation. It provided a broad based plan with very general guidelines, thereby affording each commander maximum flexibility to design implementation strategies. The plan also provided the opportunities to apply tools that best served the needs of the organization. General Wagner urged each commander to demonstrate his willingness to adopt TQM principles by committing sufficient time and resources to make them work.⁶³

TQM Training

To begin the formal AMC TQM training process, General Wagner arranged for all members of the AMC Executive Steering Committee to attend a two-day seminar presented by the University of Tennessee at Knoxville on 29-30 June 1989. The session, which was tailored for HQ AMC/TRADOC senior executives, was specifically keyed to productivity through quality. This initial seminar was followed by a second session on 10-12 September 1989 for HQ AMC Deputy/Assistant Deputy Chiefs of Staff. During FY89, most MSC commanders and some installation commanders provided their executive staffs with TQM awareness training.

Between June and October 1989, a TQM Training Task Force, composed of TRADOC representatives and key players from selected AMC MSCs, depots, colleges, the HQ AMC DCS for Personnel, and HQ TRADOC agreed to develop common training for the two commands. The Task Force agreed to develop the appropriate training strategy, course objectives and programs of instruction. It recommended that the Army Management Engineering College take the lead in developing and presenting TQM training, with assistance from the Army Logistics Management College.

The Task Force further recommended that TQM training be given on four levels: executive, management and supervisory, process action team/employee, and installation trainer/facilitator. This training approach was reviewed by the AMC Executive Steering Committee during the November 1989 AMC Commander's Conference. TRADOC indicated that it planned to use the AMC TQM training capability for their staff. The AMC training strategy was based upon just-in-time team training using the four level training curriculum developed by the Army Management Engineering College.

TQM Implementation

Watervliet Arsenal's objectives in implementing TQM were to improve its ability to manufacture and deliver a quality product and to improve its competitive posture. To meet these objectives, Watervliet made extensive use of consultants from the University of Tennessee Center for the Advancement of Organizational Effectiveness. As of March 1989, Watervliet Arsenal estimated that it had achieved, as a result of TQM initiatives, a total savings/cost avoidance of \$12.5 million. In recognition of these improvements, Watervliet Arsenal was selected as the only DOD recipient of the President's Council of Management Improvement Award for Excellence, attended by Vice President Dan Quayle on 2 June 1989.

Using a process improvement model developed by the U.S. Navy Personnel Research and Development Center, Sacramento Army Depot made significant progress in the development and implementation of Total Quality Management/People Dedicated to Quality (TQM/PDQ). During the first year of the program, depot employees completed approximately seven thousand hours of training. The depot implemented a Quality Management Board system through which interdepartmental teams of mid-level managers directed process action teams. Sacramento Army Depot also reorganized its Directorate for Maintenance to make it more customer-oriented and to eliminate unnecessary levels of supervision. In July 1989, the depot commander briefed the depot TQM experiences, problems and benefits realized to the ATQMC. As a result of these and other efforts, the depot was presented the Community of Excellence Award in May 1989.

⁶³GEN Wagner to Distribution, 18 July 1989, subj: AMC Implementation Plan for TQM.

In December 1988, the Assistant Secretary for Research, Development and Acquisition directed the establishment of an Army Science Board Ad Hoc Panel to study the implementation of Total Quality Management and to recommend how the Army could more effectively implement TQM concepts and practices. During the summer of 1989, the Board visited HQ AMC, Sacramento Army Depot and the U.S. Army Aviation Systems Command, and reported its findings.

Anniston Army Depot's TQM implementation Manual was developed in October 1988. Since that time, two hundred managers and more than one thousand other employees have received training. In April 1989, a pilot project in the Small Arms Shop was successfully completed. Worker level process improvement teams were being used extensively throughout the depot. In addition, Anniston developed a proposal to eliminate individual performance appraisals and shift performance evaluation to the group level. This proposal required approval by OPM before its use as a demonstration project.

The Special Assistant for Total Quality Management told the AMC TQM story to a number of organizations, both within and outside the Command. The speaking engagements included an Association of the United States Army Symposium, a Workshop in Quality Assurance Management conducted by the Army Management Engineering College, the second annual AMC Labor and Employee Relations Executive Development Training Conference, the Rockwell International Total Quality Management Conference, the Chief Counsels Annual Training Conference, and the LOGAMP Developmental Conference.

Chapter III

Materiel Acquisition

Office of the Deputy Commanding General for Research, Development and Acquisition (DCGRDA)

Organizational and Personnel Changes

LTG Jerry M. Bunyard was the Deputy Commanding General for Research, Development and Acquisition until his retirement on 30 September 1989.¹ Mr. Robert O. Black, Principal Assistant Deputy for Research, Development and Acquisition retired on 2 July 1989 and was replaced by Mr. Darold L. Griffin, effective 26 March 1990. Mr. Bryant R. Dunetz was the Assistant Deputy for International Cooperative Programs.

TDA authorizations for the Office of the Deputy Commanding General for Research, Development and Acquisition were 36 civilians and 6 military.

Effective 1 October 1988, the Office of Project Management was merged with the Office of the Deputy Commanding General for Research, Development and Acquisition as a separate division. Coinciding with this merger at the start of FY89, the Deputy Chief of Staff for Development, Engineering and Acquisition transferred to the Project Management Office the function of managing the *Army RD&A Bulletin*. At the same time, the Project Management Office transferred its responsibilities for oversight over Functional Area Assessments to the Deputy Chief of Staff for Readiness.

On 11 May 1989, Mr. Michael P.W. Stone, the Army Acquisition Executive (AAE), announced his decision to disestablish the Program Manager/Acquisition Information Management/Department of the Army Information Network (PM/AIM/DAIN) and to integrate Program Executive Officer, Management Information Systems (PEO MIS) with PEO Standard Management Information Systems (PEO STAMIS) to form PEO Major Army Information Systems (PEO MAIS). This action resulted in the AIM program being transferred from Army Materiel Command to the Assistant Secretary of the Army for Research, Development and Acquisition (ASARDA).

The reason for the change was that the AIM Program's objectives had changed from "Support Army leadership with a common, classified, real time, integrated research, development and acquisition data base network that is interactive and immediately accessible (when necessary) to all users, and ensure that the data in the network is collected, reviewed, validated, controlled, and submitted on time to support Army-wide RDA information management needs" to a narrower focus of support to the PEOs and AAE.

¹Unless otherwise noted, information in this section was taken from the DCGRDA AHR submission for FY89.

The ensuing shift in strategy resulted in a smaller program that no longer required PEO management. Mr. Stone felt that it would be inappropriate to have the program revert to AMC management since the program was in direct support of the AAE, and therefore he directed that it be managed by a new DA Field Operating Agency which was to be established. The AMC AIM office retained responsibility for RDA information within AMC including implementation of AIM within AMC.²

Since LTG Cianciolo's arrival and in line with AMC's 7 mission areas, several meetings have been held to define the new RDA mission and concepts of operation. This also supports the implementation of total quality management (TQM) in the RDA community. AMC, as an organization, was making the transition from direct management of major programs (the role AMC had previously held) to matrix support for the PEO organizations which now manage these programs.

AMCDRA LAN

In FY89, the office's Local Area Network (LAN) was expanded to more than twice its previous size and several new capabilities were added. Over 30 Personal Computers, including those in the Commanding General's front office, were added to the LAN. The ability to completely access the LAN via dial-up modem over standard telephone lines was added with both in-state and national 800 numbers available. A key database supporting management of all Army PEOs and PMs was developed and placed on the LAN. The LAN's electronic mail program was enhanced to a much more robust version. A database including real time information with concise executive summaries on DA and DOD program budget decisions was added. Security and reliability enhancements were made that resulted in the LAN having better than a 99.3 percent full capability during FY89 based on a complete 24-hour-per-day, 7-day-a-week operational schedule.

Project Management Issues

The Defense Management Review (released July 1989) impacted heavily on the program executive officer concept. The impact to the Army was kept to a minimum because of the foresight of Army leadership.

Work was progressing on a concept plan for the establishment of the U.S. Army Acquisition Executive Support Agency reporting to The Army Acquisition Executive. This office would be comprised of the missions and functions and personnel currently assigned to the Project Management Office (DCGRDA). The anticipated effective date of the transfer was 1 January 1990.

Proponency for Materiel Acquisition Management (MAM) Program and FA51 Program (Acquisition)

Restructuring of the Materiel Acquisition Management Program was ongoing and the establishment of the Army Acquisition Corps was approved. FA51 quotas for Training with Industry were increased. Two Force Readiness Officers for FA 51 were assigned to the U.S. Total Army Personnel Command to support both the proponent for MAN and FA51.

²The original mission statement came from ASARDA Memo, dated 3 June 1987 quoted in the DCGRDA AHR submission for FY89. See SARD-RPP MEMORANDUM FOR DISTRIBUTION, SUBJECT: Changes in the Acquisition Information Management (AIM) Program and in the Implementation of PEO MAIS, 11 May 1989, for the change in the AIM structure.

Office of the Chief Scientist

In May 1988, the position of Chief Scientist at Headquarters, U.S. Army Materiel Command was reestablished by General Wagner after a hiatus of 15 years (since 1973), during which the position had been abolished and its functions absorbed by the Deputy for Science and Technology. The position of Chief Scientist was originally created in 1963 as an independent office and remained so until 1966 when it was placed under the Deputy for Research and Laboratories for the next seven years (1966-1973).

The Office of the Chief Scientist consists of the Chief Scientist, an Assistant Chief Scientist, a military assistant, and a secretary. Reporting directly to the Commanding General, the Chief Scientist serves as his principal advisor and consultant on scientific and technological matters. He is responsible for working with the DCG for Research, Development and Acquisition (DCGRDA) and the DCS for Technology Planning and Management (DCSTPM), who is also the LABCOM Commanding General, in the formulation, maintenance and implementation of AMC's long-range strategic plan for the future investment of AMC's science and technology resources.³

The Chief Scientist also provides an AMC senior-level link and representation to scientific and technological organizations such as the Army Science Board (ASB), the Defense Science Board (DSB), the Board for Army Science and Technology (BAST), the National Academy of Sciences, as well as the scientific, academic and industrial communities.

In July 1988, GEN Wagner selected as his Chief Scientist Dr. Richard Chait, former Associate Director of the U.S. Army Materials Technology Laboratory (MTL), Watertown, Massachusetts. A graduate of Rensselaer Polytechnic Institute and Syracuse University with undergraduate and graduate degrees in Metallurgical Engineering and Solid State Science respectively, Dr. Chait held key management positions in Metals and Ceramics, the Mechanics and Engineering and the Engineering Standardization Divisions during his 19 years at MTL.⁴

Dr. Chait viewed his main responsibilities at AMC as being the interface between the external technological and scientific community and the CG, AMC, and the communicator of external technological and scientific ideas to the technical directors and line managers of AMC's laboratory and research, development and engineering centers. His responsibilities involve constant awareness of current and emerging technologies in the AMC community as well as the private sectors of academia and industry and in the international arena.⁵

Early in the fiscal year, Dr. Chait was asked by GEN Wagner to be the Army focal point for a study undertaken by the National Academy of Sciences at the request of Dr. Jay R. Scully, Assistant Secretary of the Army for Research, Development and Acquisition (ASARDA). Focusing on the technological advances which may exist 20 to 30 years hence, and which would affect the battlefield significantly, the study, known as the STAR Study (Strategic Technologies for the Army) is scheduled for completion in December 1990.⁶ To provide the required Army participation, the Chief Scientist directed the formation of a group of leading Army scientists and engineers drawn from AMC, the Corps of Engineers, the Army Research Institute and the Medical Command, to be the main interface with the Academy of Sciences the 16 panels that form the

³Letter, AMCMP, dated 6 October 1988, subject: Chief Scientist.

⁴Biographical Sketch, Dr. Richard Chait.

⁵Oral History Interview, Dr. Chait with Dr. Darius and Mr. Coppola, 23 May 1990.

⁶Ibid.

study group. This Army scientific and technological contingent was recognized by the Study chairman as having been the key factor in the successful start of the STAR Study.

Other activities included: participating in the Tech-Base Advisory Group (TBAG), consisting of the technical directors of the AMC laboratories and research centers; involvement in the technological base master plan formulation in concert with the SARDA organization; arranging discussions between Chief Scientists of the Air Force and Navy Chief Scientists and those of other interested federal agencies on topics of mutual interest; increasing participation by West Point cadets in the 1989 Summer Research Program at AMC laboratories and research centers; helping to create, in concert with the AMC Technical Directors, new research intern positions within the DA intern program; visiting several European countries to meet scientists and researchers involved with the Field Assistance in Science and Technology (FAST) program, U.S. Army Standardization Groups and the Scientific and Technical Information Center.

General Wagner said this of his Chief Scientist: "I listen very carefully to what Dr. Chait says."⁷ The position of Chief Scientist was established to have somebody "at the right hand of the commander," to keep him "up to speed on technology and who is AMC's face to the scientists and technologists of the U.S. and the world."⁸ The idea seems to have succeeded.

Office of the Deputy Chief of Staff for Development, Engineering and Acquisition (DCSDE)

The Office of the Deputy Chief of Staff for Development, Engineering and Acquisition (ODCSDE and DEA) lost a handful of spaces in FY89, primarily through the transfer of functions and the through the headquarters AMC civilian space reduction. The DCS had started the year with an authorization of 36 military and 225 civilian spaces. It ended the year with an authorization for 35 military and 220 civilian spaces, an overall loss of one military and five civilian spaces.

The DCS lost two civilian spaces and their incumbents, effective 4 October 1988, when the responsibility for editing the *RD&A Bulletin* was transferred to the Office of Project Management. An additional 5 civilian spaces were lost effective 31 October 1988 after LTG Jerry Max Bunyard, AMC's Deputy Commanding General for Research, Development and Acquisition, approved the loss of five spaces as AMCDE's share of the headquarters AMC civilian space reduction. One vacant military position, that of a captain, was lost by direction of the Chief of Staff. Two civilian spaces were gained as a result of the transfer of the functions and personnel of the Joint Activities Coordinator to the DCS effective 18 August 1989. One colonel position which had functioned as the chief of the Acquisition Policy Division was downgraded to a R&D Coordinator lieutenant colonel position. The position of division chief was civilianized and filled internally by a GM-15.

A variety of key positions changed hands in this period at the division chief and Assistant Deputy Chief of Staff level. However, the DCS was headed throughout this period by MG Joe W. Rigby. The DCS had three Assistant Deputy Chiefs of Staff (ADCS), one for Program Management, one for Acquisition

⁷Interview, Oral History Program, Former Commanders, General Louis C. Wagner, Jr., 31 August 1989, AMC Historical Office, p. 63.

⁸Ibid.

Management, both with a number of divisions under them, and a third for Special Operations Forces. In addition, a number of divisions dealing with various types of weapons systems fell directly under the DCS.⁹

Assistant DCS for Acquisition Management

Office of the Special Assistant for Joint Activities

This office was responsible for the preparation and support for the meetings of the Joint Logistics Commanders (JLC), the commanders of the Air Force Systems Command (AFSC), Air Force Logistics Command, the Deputy Chief of Naval Operations-Logistics, and the Army Materiel Command. Four such meetings were held in FY89 as follows: 13-14 Dec 89, hosted by AFSC at the Air Force Conference Center at Homestead Air Force Base, FL; 14-16 Mar 89 hosted by AMC at Corpus Christi Army Depot, Corpus Christi, TX; 20-21 Jun 89 hosted by the Chief of Naval Operations (Logistics) at the Naval Aviation Depot, North Island, CA; and 13-15 Sep 89 hosted by AFSC at the Air Force Flight Test Center, Edwards Air Force Base, CA. A wide variety of topics were discussed by the JLC--some of which resulted in agreements as to joint actions to be taken while many other topics resulted in a joint position to be presented to the DOD Secretariat.¹⁰

Acquisition Policy Division

The five most significant issues handled by this division included the Atlanta XV Conference, support to the Army Implementation Planning Group for the Defense Management Review, MANPRINT, the JLC Acquisition Streamlining Group, and the DEA Magna Carta. In addition to these issues, a variety of other significant issues were handled by the division in the course of the year, and they too will be covered below.

Atlanta XV Conference. The Atlanta Conferences were annual executive level seminars sponsored by AMC. It provided a forum for corporate executives and senior government officials to discuss important acquisition issues. At the request of the Principal Assistant Deputy for RDA, the Acquisition Policy Division provided the planning and administrative support required for the conference.

A number of major issues were discussed at the April 1989 Conference. General Thurman, the Training and Doctrine Command (TRADOC) Commanding General, spoke of the need to obtain operating and support (O&S) cost reductions. One of the problems in reducing these costs was that the selection criteria in Requests for Proposals (RFPs) caused contractors to emphasize cost reduction in the early stages of the life cycle, rather than emphasizing O&S and overall life cycle cost reductions. It was difficult to evaluate O&S cost reduction in contract proposals under the point system, but contractual language was needed to encourage and provide evaluation criteria for O&S reduction. The need was recognized for a small group of military and industrial leaders to look at the issue. An AMC/TRADOC letter to industry was also needed to encourage industry to undertake O&S reduction. This was to be a principal discussion topic for the Atlanta XVI Conference.

⁹See the ODCSDE AHR submission for FY89, Tab A and organization chart. Unless otherwise noted, all information in this section is taken from the DCSDE AHR submission for FY89.

¹⁰See MEMORANDUM FOR THE RECORD, SUBJECT: Joint Logistics Commanders' (JLC) Meeting, 22 Dec 88; MEMORANDUM FOR THE RECORD, SUBJECT: Joint Logistics Commanders' (JLC) Meeting, ca. late March 1989; MEMORANDUM FOR THE RECORD, SUBJECT: Joint Logistics Commanders' (JLC) Meeting, 29 Jun 89; and MEMORANDUM FOR THE RECORD, SUBJECT: Joint Logistics Commanders' (JLC) Meeting, 25 Sep 89, in the AMC Archives.

Other key issues discussed at the conference included General Wagner's warning that although multi-year contracts can save the government money, they can also tie up an unduly large share of the Army's budget. If 9 or 10 major programs consuming the majority of the Army's budget for acquisition were on multi-year contracts, then a budget cut could result in the Army having to cancel many of its smaller programs and still not having enough money to pay for its planned purchases under the multi-year contracts. There was a need to structure such contracts so that the Army could purchase variable quantities between 75 percent and 100 percent of the programmed purchases each year.

After the AMC panel, comments were made in several areas. There was a need for a cohesive software policy and for improved software education and training. Often top personnel were not software literate, and software requirements were often overstated and not properly costed. A tailored software acquisition model was needed. The government needed to develop incentives and look at past performance in software development. There was also a need to exploit independent software efforts in Independent Research and Development (IR&D) programs. To increase IR&D efforts in software, changes were also needed in data rights to give industry greater rights to the software developed with IR&D money. Other comments made after the AMC panel included the need to put IR&D into a regulation or instruction, and the need to better staff RFPs with industry.

Other issues raised during the conference as a whole included Total Quality Management, the adversarial relationship between government and industry, requirements and the need for operational specifications, investment incentives, setting priorities at the DOD level, feedback data to industry on fielding items, educating Congress, Could Cost, and the need to expand the Defense Enterprise Program from challenging statutes to challenging other forms of regulatory guidance.¹¹

Defense Management Review (DMR). The division prepared comments and position papers on Army proposals for implementing the Defense Management Review (DMR). It also reviewed and commented on the weekly versions of the Army Management Review Report, which evolved into the Army's final plan for implementing the DMR.

The division also participated in the OSD directed zero-based regulatory review effort generated by the DMR, and served as the focal point for consolidating the review of all DOD 5000-derivative AMC regulations which were based upon the DOD 5000 series directives. This review was to determine the currency and necessity of the AMC regulations. The division also prepared the HQ AMC position on the proposed new DOD Directive 5000.1 and the accompanying manual, which consolidate 26 DOD regulations.

MANPRINT. AMC top management continued supporting the Army's MANPRINT program during FY89. MANPRINT requirements were to be identified in basic requirements documents, requests for proposals, and were major factors in the source selection criteria. HQ AMC MANPRINT representatives carried out oversight responsibility for the program of instruction for MANPRINT courses taught both at Fort Belvoir and various AMC/TRADOC on-site locations. Guidance and valuable advice was provided to major subordinate commands (MSCs), Program Executive Officers (PEOs), Program Managers (PMs), other program sponsors, and functional representatives. Initial work on development of a MANPRINT Military Standard was completed, approved by the CG, and forwarded to the MICOM standardization office for tri-service staffing. Regularly scheduled videoconferences with AMC focal points were conducted to provide feedback and maintain peak awareness on MANPRINT related issues.

¹¹"Issues From Atlanta XV Conference," in Tab C of AMCDE AHR submission for FY89.

AMC-P 602-2, *Non-Materiel Systems: MANPRINT HANDBOOK FOR NONDEVELOPMENTAL ITEMS (NDI) ACQUISITION*, was published on 26 January 1989. It was developed by a contractor, Hay Systems, for AMC to address:

the key areas of NDI/MANPRINT interface by showing how the MANPRINT process is applied in each phase of the NDI acquisition process. The guide is intended for use in establishing the key MANPRINT issues to be included in the Independent Evaluation Plan (IEP), the Market Investigation (MI) and the NDI procurement solicitation. The guide is designed to stress total system performance by: defining the MANPRINT performance concerns, developing MANPRINT issues relevant to those concerns, and preparing questions that address the performance issues during the MI.¹²

Joint Logistics Commanders (JLC) Acquisition Streamlining Group. The division supported AMC's Principal Assistant Deputy for RDA, who was also the Army Streamlining Advocate, in preparing a briefing to the Joint Logistics Commanders on efforts necessary to improve the application of streamlining initiatives. The briefing focused on clarifying the integration and control of initiatives at the OSD level. Parts of this briefing were eventually presented to the Stevens Committee, a group established by the new Bush administration to review the Defense Management structure and recommend to the President changes needed within DOD. The committee was named for attorney Paul Schott Stevens.

A variety of other acquisition streamlining activities took place during FY89, highlighted by the National Conference on Acquisition Streamlining, which was sponsored jointly by the Department of Defense and each of the services in conjunction with industry. The conference was held from 31 May to 1 June 1989 in Crystal City, VA. Its theme was "Streamlining Requirements for the 90's," and the conference provided attendees with an understanding of the new administration's perspectives on acquisition streamlining, a clarification of the synergism between acquisition streamlining and total quality management, and an update on acquisition streamlining implementation.¹³

The Army recipients of the 1988 OSD Acquisition Streamlining Excellence Award were Mr. Feliciano Giordano, Information Systems Command and the Advanced Anti-Tank Weapon System -- Medium (AAWS-M) Project Management Office. The awards were presented on 31 May 89 by Mr. Donald J. Atwood, Deputy Secretary of Defense, as part of the National Conference on Acquisition Streamlining.

The Army Streamlined Acquisition Program (ASAP) Course was presented nine times during 1989 to both Government and industry personnel involved in some aspect of the Army acquisition process. A total of fifteen acquisition streamlining courses had been presented to approximately 400 individuals since the effort had begun. The course covered streamlining principles within the context of current acquisition policy. As funding was not available to continue this effort into 1990, action was initiated to incorporate acquisition streamlining principles into other acquisition related courses taught by Army Logistics Management Center (ALMC) and the Army Management Engineering College (AMEC).

DEA Magna Carta. The division prepared a DEA charter, or Magna Carta, to clarify DEA's responsibilities and operational relationships with the MSCs/PEOs/PMs under the PEO management structure. The charter was based on the Total Quality Management philosophy, emphasizing commitment to customer satisfaction, continuous process improvement and DEA management through teamwork, rather

¹²AMC-P 602-2, *MANPRINT HANDBOOK FOR NONDEVELOPMENTAL ITEM (NDI) ACQUISITION*, 26 Jan 1989, p. [i].

¹³ The conference agenda can be found in DOD, "National Conference on Acquisition Streamlining: Streamlining Requirements for the 90s, in Tab C of AMCDE AHR Submission for FY89.

than organizational position. The Magna Carta was disseminated under the CG, AMC's memorandum to all HQ AMC DCSs, under DCSDE's personal letter to all PMs through MSC Commanders and PEOs, and to the DCSDE staff in a memorandum from the DCS chief.¹⁴

The charter described how the directorate functioned under the concept of parallel decision chains in which the DCS provided functional management while the PEO/PM chain or the program sponsor provided programmatic management, and also how it would function under the Total Quality Management concept in which the functions of higher headquarters were limited to establishing policy, ensuring policy compliance, and resolving issues about the application of policies to various programs in subordinate organizations. The essence of this 17 page document was captured in summary form in capitalized bold print passages at the end of each section:

AMC IS RESPONSIBLE FOR SUPPORTING OVERALL ACQUISITION MANAGEMENT. DEA DEVELOPS ACQUISITION MANAGEMENT POLICY AND EXECUTES TOTAL PROGRAM INTEGRATION INCLUDING ACQUISITION APPROPRIATION MANAGEMENT.

DEA IS THE PRIMARY STAFF ELEMENT WHICH ASSISTS THE CG AMC IN CARRYING OUT HIS MISSION IN MATERIEL ACQUISITION. DEA IS THE STAFF AGENT FOR THE CG AMC IN HIS ROLE AS AN ASARC MEMBER FOR PEO PROGRAMS AND AS THE SENIOR DECISION AUTHORITY FOR NON-PEO PROGRAMS.

DEA OVERSEES ALL THE ORGANIZATIONAL ELEMENTS THAT PROVIDE FUNCTIONAL SERVICES IN PROGRAM MANAGEMENT, AND DIRECTS AND COORDINATES ALL HQ AMC DCS SUPPORT FOR MATERIEL ACQUISITION.

DEA INTERACTS IN AN IDENTICAL MANNER WITH PEO AND NON-PEO PROGRAMS TO SUPPORT AND IMPACT PROGRAM MANAGEMENT AND PROGRAM MANAGEMENT DELIBERATIONS; ONLY THE TITLES OF THE PROGRAM DECISION AUTHORITIES DIFFER. DEA EXECUTES THE CG AMC ACQUISITION MANAGEMENT RESPONSIBILITY THROUGH IDENTIFICATION OF ISSUES AND ALTERNATIVE SOLUTIONS, AND IMPACTS THE PROGRAM MANAGEMENT DELIBERATIONS IN A SUPPORT AND STAFF ADVISORY CAPACITY.

DEA PROVIDES CONTINUOUS, REAL-TIME SERVICES AND SUPPORT IN PROGRAM MANAGEMENT FOR ALL MATERIEL ACQUISITION PROGRAMS THROUGH A SYSTEM STAFF ENGINEER (SSE).¹⁵

DEA FOSTERS, HELPS AND FURTHERS APPROPRIATE TAILORING AND INTEGRATION OF FUNCTIONAL POLICY AS APPLIED TO SPECIFIC ACQUISITION PROGRAMS. DEA FOSTERS, HELPS AND FURTHERS SOUND BUSINESS PRACTICES AND ECONOMICAL RESOURCE APPLICATION IN THE EXECUTION OF PROGRAM MANAGEMENT. DEA FACILITATES PROGRAM MANAGEMENT AND PROGRAM MANAGEMENT DELIBERATIONS.

¹⁴The key points of the charter are discussed in the FY88 AHR. The charter was written in FY88 but much of its dissemination took place in FY89. For the details of the charter and an explanation of its rationale, see Memorandum for DCS DEA Employees, Subj: DEA Role in Total Quality Acquisition Management (DEA MAGNA CARTA), 22 Nov 89.

¹⁵This is the only one of the highlighted passages which differs from an earlier version included in the FY88 AHR.

DEA PARTICIPATION ADDS VALUE THROUGH POLICY, POLICY COMPLIANCE, APPROPRIATION MANAGEMENT, ISSUE RESOLUTION, AND BY FURTHERING SOUND PROGRAM MANAGEMENT.

Total Quality Acquisition Management. As part of DEA's implementation of Total Quality Management, the division coordinated a process in which each DEA division identified and defined one work process or subprocess for which it was assigned responsibility or in which it played a major role.¹⁶ A flowchart for each selected process was prepared. This action was the first step in the continuous process improvement cycle. Once the processes were defined, relevant measurement points would be identified and opportunities for improvement identified and prioritized. Concurrent with this effort, arrangements were made for TQM training for DEA personnel.

Nonmajor Programs. A major effort was undertaken to accurately identify all nonmajor programs within the AMC/PEO community for accountability and to ensure effective management oversight of each program. The effort resulted in successful identification of a total of 694 systems which were broken out into each of the three levels of nonmajor categories. They were further identified as PEO-managed, MSC-managed or direct reporting to HQ AMC. A review of the management oversight capability at each of the MSCs revealed appropriate measures in place and in accordance with the intent of AR 70-1. This effort was initiated as a result of an Army Audit Agency review of nonmajor programs during FY88.

Design to Cost (DTC). High level emphasis continued to be placed on the application of DTC within the materiel acquisition process. Design to Cost was a program management tool for controlling production and operating/support costs through judicious use of optimal design considerations. This emphasis by AMC had resulted in development of a DOD DTC course presented quarterly at ALMC; an automated DTC quarterly status reporting system; DOD DTC Military Standard 337; DOD DTC Handbook 766, Design to Cost; and Data Item Descriptions (DIDs) for the DTC Plan the DTC Report. In addition, both AR 70-64, Design to Cost, and AMC-P 70-19, Design to Cost Guide, were revised, with a supplement written for the former. Also, numerous videoconferences, workshops, and staff assistance visits to MSCs were performed. As a result of AMC's initiatives, the DOD IG gave the Army the highest ranking of the all the services in implementing Design to Cost.

Design for Discard (DFD). The objective of the DFD program was to reduce or eliminate the manpower, personnel and training burden of the materiel maintenance effort. DFD was a systems engineering effort directed at increasing the percentage of components which may be economically discarded rather than repaired.

Significant efforts during FY89 included starting the final draft of a new Systems Engineer's Handbook for DFD, to be published as a DOD Handbook in the Engineering Design Handbook series, and presentations made at three Design-to-Cost classes at the Army Logistics Management College (ALMC) and at the annual DA Integrated Logistics Support (ILS) Executive Symposium. An article on the relationship of DFD to various other logistical and engineering specialties was published in the *Army RD&A Bulletin*.¹⁷

Minimization of Hazardous Wastes (HAZMIN). Increasing DOD attention on the disposal of toxic and hazardous wastes, once solely the concern of the Chief of Engineers and the Surgeon General, caused

¹⁶For this tasking, see Memorandum to Distribution, Subj: AMCDE Process Improvement, 20 Oct 1989, in Tab C of AMCDE AHR Submission for FY89.

¹⁷Dan McDavid, "Design-for-Discard in Systems Engineering," *Army RD&A Bulletin* (Nov-Dec 1988), pp. 17-19,

the Secretary of the Army to take several actions in FY89. Minimization of such wastes, HAZMIN, became a prime topic for the DA IG. A study on how to preclude waste production during systems acquisition was directed by the Secretary of the Army for Research, Development, and Acquisition (SARDA). An Army Five-Year HAZMIN Plan was initiated by the Construction Engineering Research Laboratory (CERL). AMCDE was tasked to furnish the personnel to write the part of the SARDA study concerned with systems acquisition. The AMCDE personnel attended DA IG meetings, to keep them abreast of actions proposed in acquisition, as well as participating in the initial planning meetings with CERL personnel to help them initiate the Five-Year HAZMIN Plan.¹⁸

Materiel Acquisition Handbook and Type Classification. Revision of AMC-TRADOC Pamphlet 70-2 had been delayed pending the availability of the final draft of AR 71-9, Materiel Objectives and Requirements. AR 71-9 was being held in abeyance pending the outcome of the DMR. Certain chapters of the handbook (Type Classification, Materiel Acquisition Decision Process Reviews, and a new chapter on Materiel Systems Computer Resources) were being updated and would be staffed and distributed for use pending update of the handbook, with distribution expected to take place not later than April 1990.

The division prepared and staffed the draft chapter on type classification (TC). The chapter was designed to integrate TC policies, delineated in AR 70-1, with TC procedures detailed in the pamphlet. Specifically, the chapter prescribed TC applicability and provided a definitive listing of classes of items exempt from TC, set forth cataloging activities associated with item TC, delineated specific procedures associated with each TC designation, defined the AMC and TRADOC role in the TC process, and amplified TC policy with respect to directed procurements and sets, kits, and outfits (SKO).

Acquisition and Integration Analysis Division

The most significant issues the Acquisition and Integration Analysis Division dealt with in FY89 were the Materiel Change Management Process, the Armor/Anti-Armor Modernization Plan, the Professional Enrichment Series Presentations, the activities of the Materiel Acquisition Review Board (MARB), AMC Pamphlet 70-18 (Sources of Expertise during the Army Materiel Acquisition Process), and Electromagnetic Environmental Effects (E3). These and other issues are discussed in more detail below.

Materiel Change Management (MCM). MCM encompassed the management of all changes to type classified systems/end items, both in production and the field. The basic concept for the MCM process was approved by the Under Secretary of the Army in June 1987. Formulation of a new AR 70-15, Materiel Change Management, was initiated in FY88. Pending publication of this regulation, however, Interim Operating Instructions published on 20 September 1988 served as the guidance for material change management.

Development of the new AR 70-15 continued through FY89. Two drafts were staffed worldwide, the first in December 1988, the second in May 1989. Comments on each draft were reviewed and were incorporated in the regulation. A third draft was staffed within HQ AMC in August and the comments on this draft were being coordinated with HQ Training and Doctrine Command (TRADOC) and with other HQ AMC directorates at the end of FY89. This AR, which would replace the current ARs 70-15 and 750-10, was expected to be ready for publication during the second quarter of FY90.

Two key elements of MCM were the Materiel Change Information System (MCIS) and the System Improvement Plan (SIP). The MCIS was an automated database, accessible by all Army agencies, which provided the capability to record, update, and retrieve data on any materiel change. Prototype testing of the MCIS was completed on 31 August 1989, and the system became operational on 1 September 1989.

¹⁸For more on this topic, see the Resources Management chapter.

The MCIS was designed to provide more timely data on materiel changes than what had been previously available and to significantly reduce the flow of paper.

The SIP was a comprehensive plan displaying all ongoing and planned changes to a system. A SIP was prepared for any system designated as a Major Defense Acquisition Program (MDAP) or an Army Designated Acquisition Program (ADAP), or any system managed by a project manager designated by the Army Acquisition Executive. In January 1989, a memo was sent to all AMC subordinate commands and Program Executive Officers identifying systems for which SIPs were required. By the end of FY89, SIPs had been submitted for 47 systems/end items.

Armor/Anti-Armor Modernization Plan. An Armor/Anti-Armor Task Force was established early in Calendar Year 1988, by the Chief of Staff of the Army (CSA), to be the lead organization to gather data on the large number of Army Acquisition programs in these areas and to formulate an Armor/Anti-Armor Modernization Plan. The Task Force divided its assignment into three distinct areas: Anti-Tank Direct Fire; Anti-Tank Indirect Fire/Disabling/Counter-Mobility; and Tanks/Kinetic Energy Munitions. Information was gathered with the assistance of TRADOC, Intelligence, various PEO's and Program Managers, Army Family of Vehicles (AFV) Task Force, HQ AMC and its Major Subordinate Commands. An initial series of Program Reviews was provided to the Chief of Staff on the Armored Family of Vehicles (now Heavy Force Modernization), Advanced Antitank Weapon System/Advanced Missile System (AAWS/AMS), and Tanks in preparation for the budget submission during August 1988.

Briefings to the Office of the Secretary of Defense (OSD) Conventional Systems Committee were given in early FY89 for Armored Family of Vehicles, Tanks/Kinetic-Energy Munitions programs, Anti-Tank Direct Fire Programs, Anti-Tank Indirect Fire and Countermobility Programs, Directed Energy Programs, and Combat Arms Concepts Development Agency (CACDA) analysis. These briefing packages, once briefed to the Conventional Systems Committee, were used as the basis for a written Armor/Anti-Armor Modernization Plan, which was approved by the CSA on 12 May 1989. The CG, AMC was briefed on the plan by COL(P) White, Director of the Task Force, on 18 May 1989. The Armor/Anti-Armor Modernization Plan was published in May 1989 and distributed on a selected basis.

Professional Enrichment Series Presentations. At the request of ADCSDEA, the division established procedures to facilitate bi-monthly presentations intended to augment the professional knowledge of DCSDEA System Staff Engineers (SSEs). The initial topic, SINCGARS Second Source - Source Selection, was patterned after a presentation at the 1988 Atlanta Conference which focused on lessons learned. The topic for the second presentation was Simulator Networking for Battlefield Developments (SIMNET-D) and was presented by a contractor's representative. The third topic, AH-1 Cobra Product Improvement Program, was presented by the Cobra PM and a contractor's representative. Assistance was provided by the DCS's Support Systems Division for SIMNET-D and by its Aviation Division for the AH-1 Cobra. Presentations were to continue on a quarterly basis with renewed emphasis on promoting interest and attendance.

Material Acquisition Review Board (MARB) Activities. MARB activities focused on a functional support role with MSC's. Requests for policy interpretation and clarification of our MARB policy letter of November 1988 were answered. The division continued to maintain contact with MSC representatives on Master Calendar of Acquisition Activities (MCAA). The division also contributed to a review of MARB policy for inclusion in proposed update of former AMC/TRADOC Pamphlet 70-2, *Materiel Acquisition Handbook*.

AMC Pamphlet 70-18, *Sources of Expertise During the Army Materiel Acquisition Process*. AMCP 70-18 consisted of a chart which was to help the materiel acquisition action officer in searching for appropriate government wide expertise. As part of AMCP-70-18, a computer program was provided which related key words to areas of expertise, thus making it possible for users with a personal computer to rapidly locate the desired line item. For example, under the topic "Robotics" the Human Engineering Laboratory is listed

together with its mailing address. In addition, the key words "Robotics," "Automation," and "Artificial Intelligence" are associated with this topic and the use of any of them would enable the topic to be located by the computer search.

An automation enhancement planned for the near future consisted of a centralized database to provide an up-to-date matrix and other additional features not available on the floppy disks. This technique of applying computer technology to enhance utilization of a hard copy reference document was applied for the first time with this pamphlet. Active and successful application by the user was expected to lead to widespread use of the technique with references and instructional documents.

Electromagnetic Environmental Effects (E3). The E3 Branch was established in July 1989, as a result of a determination by the AMC Electromagnetic Effects Task Force. The Task Force, which had been chartered by ASA(RDA), found that the Army possesses the resources to insure that Army materiel was able to function in the electromagnetic environment. The mission of the E3 Branch was to providing top-down guidance, coordination, and oversight management of all aspects of E3 throughout Army materiel acquisition life cycle. It was the primary policy maker in AMC on this topic and also provided technical support to the Headquarters, Department of the Army (HQDA) staff.

An interim E3 guidance was in the process of being coordinated in FY89 and was to be published in early 1990. This policy directed all program sponsors to develop plans ensuring their systems considered E3, develop E3 criteria from accredited threat and environment data, perform analysis and tests to determine the performance of their systems against the E3 criteria, and protect and maintain their systems protection against E3 over the system life cycle.

It was determined that reported E3 problem with the Black Hawk were the result of exaggerations by the Knight Rider columnist Mark Russell of *The Washington Post*. One article quoted USAF COL Quisenberry, who misstated the Black Hawk record. There was an official USAF apology and retraction.

Mr. Black, ADCSRDA, attended the Electromagnetic Environmental Effects (E3) General Officer Review, during which the level of electromagnetic safety of the AN/PVS-5A Night Vision Goggle was questioned. It was determined that, when used exclusively with aviation, the AN/PVS-5A was not hardened to the same E3 safety levels as the AN/AVS-6 goggle. This office has directed the Night Vision Laboratory at Fort Belvoir to undertake testing on the AN/PVS-5A to the equivalent of that for the AN/AVS-6 goggle. Action on this issue was ongoing.

Acquisition Software and Automation Division

The most significant issues faced by the division in FY89 included office manpower shortage in support of the Mission Critical Computer Resources functions, the establishment of AMCR 70-16a as the interim policy guidance superseding DARCOM-R 70-16, improvement of the Computer Researches Management Plans review process, difficulty in obtaining Ada waivers and deviations, the software standardization program of the Joint Logistics Commanders, and obtaining control over the funding for the Life Cycle Software Engineering Centers.

Manpower Shortage. During April 1989, the Acquisition Software Branch (AMCDE-AT-S) and indeed HQ AMC's weapons system software management capability, was at its lowest point. At that time the branch had only three people: a newly appointed branch chief, one GS-14 action officer and one GS-6 secretary. The workload of these people was extremely heavy because they were trying to carry on the workload of an older branch which had 15 people and was inadvertently disbanded because of the lack of understanding of the level of expertise and manning required to perform required functions.

The functions carried out by the office as part of its management of the Mission Critical Computer Resources (MCCR) functions included the following: providing centralized management of software, acquisition and maintenance related to computer embedded in Army mission critical defense systems; serving as Army expert on Ada and other high order languages employed on the battlefield in weapon systems; ensuring that the Life Cycle Software Engineering Centers were efficiently managed, adequately resourced and well integrated with all aspects of the acquisition process; representing the Army on the Joint Policy Coordinating Group on Computer Resource Management (JPCG-CRM) and tri-service committees; and ensuring that AMC policy on Computer Resources management were consistent with HQDA regulations and that Computer Resources Management Plans met AMC policy guidance.

Recognizing that immediate action was required to rectify this situation and to revitalize this critical function, the DCSDEA quickly appointed an experienced in-housed AMCDE GS-15 engineer as chief. The new branch chief's initial effort was concentrated on recruiting two experienced and capable software engineers. This effort, and an adjunct action in-house to transfer an AMCDE GS-14 management analyst with strong background in computer software into the branch were rapidly completed. By the end of June 1989, the branch had grown to 6 people: The chief, the secretary and four well-qualified and highly motivated action officers to carry on the MCCR functions. One Lieutenant Colonel was also scheduled to arrive by mid-December 1989. Thus within six months after it was in dismal shape, the new AMCDE-AT-S was performing its vital functions in a highly motivated and competent manner.

Draft AMC-R 70-16A. The 16 August 1989 version of draft AMC-R 70-16A, Management of Computer Resources in Battlefield Automated Systems, was promulgated on 21 September 1989 as an interim AMC policy pending formal publication. It reflected experience and lessons learned from AMC's Life Cycle Software Engineering Centers and superseded DARCOM-R 70-16A. It augments AR 70-1 and AR 700-127 for computer resources and provides for effective management of the acquisition of battlefield automated systems and their support over the life cycle. Program Executive Officers (PEO's) and Program Managers (PMs) operating under the AMC functional support concept were encouraged to implement this regulation in their system acquisition projects. Use of this regulation by the PEOs/PMs would help ensure efficient transition of their systems to the post deployment phase. The regulation's objective was to:

ensure that computer resources, including software, in AMC BASs [Battlefield Automation Systems] are planned, developed, acquired, tested, fielded, and supported in accordance with the principles of Total Quality Management (TQM) and in a manner that is effective, timely, and minimizes total life cycle costs. A significant cost reduction is to be realized through standardization and commonality of computer resources, specifically, as they apply to cost effective support during a system's post deployment phase.¹⁹

Computer Resources Management Plans (CRMP). The division was currently developing a new Executive Checklist for the CRMPs, the purpose of which was to provide a standardized tool that would assist PMs/PEOs in meeting the CRMP requirements for each phase of their programs. The new checklist would be titled "CRMP Development Guide Checklist". It would be presented and discussed at the Life Cycle Software Engineering Centers' (LCSEC) Quarterly Conference in Orlando, Florida.

The following CRMPs have been approved: AN/ASN-132 Integrated Inertial Navigation System (IINS) and AN/ASN-137 Integrated Lightweight Doppler Navigation System (ILDNS). In addition, the Automation and Communications Resource Management Plan (ACRMP) for the Heavy Force Modernization (HFM), the AN/UPD-7 Radar Surveillance and PLRS/TIDS CRMPs were being reviewed. The review of the HFM CRMP/ACRMP was completed with concurrence but with several recommended changes. The major

¹⁹MEMORANDUM FOR DISTRIBUTION, SUBJECT: Draft AMC-R 70-16A, 16 August 1989, Management of Computer Resources in Battlefield Automated Systems, 21 Sep 89, encl 1, para 1-2.

recommendation was that each of the six HFM variants have a separate CRMP which would address the unique requirements of each variant. This would allow for the overall HFM ACRMP to remain as the umbrella document that addresses the entire program.

Ada. Cost and resources status for Ada and LCSEC were not tracked in a coordinated fashion. There was a need to develop a master software database that tracked, for management purposes, mission critical computer resources which were in the acquisition pipeline or were fielded. LCSEC had a good handle on their current work, but items in the PEO channel which would transition are not known. This data would enable efficient programming of resources as opposed to ad hoc responses.

Joint Logistics Commanders Computer Resource Management (JLC-CRM) Future Projects. A specific effort under consideration was the development of metrics to standardize reliability throughout the design of mission critical software. Drs. Arthur and Nance of VPI have presented briefings to the Joint Logistics Commanders - Computer Resource Management group on "Software Quality Measurement: A Foundational Approach." In order to effectively transfer state of the art technology, they agreed to share their insights with the LCSEC top management. Travel arrangements were coordinated with CECOM LCSEC. The JLC Aeronautical Group avionics standardization subgroup required scope of efforts and activities in this area and points of contact. The division tasked LCSECs to respond.

Life Cycle Software Support (LCSS). During the October 1989 OMB/OSD Hearing, the issue of Life Cycle Software Support (LCSS) was discussed. The main problem was that "The Army's policy on LCSS is not in sync with that of the Office of the Secretary of Defense (OSD)." The OSD analyst indicated that the Army's funding for various high priority systems was at risk. As a result of this, several meetings were held with the Army staff to redefine the Army's policy on LCSS. It became evident that the AMC and DA staff did not have a clear understanding of LCSS. These individuals were responsible for defending funding requirements in support of the four AMC LCSECs. Educational briefings were provided and a clearer understanding of the LCSECs' role in support of embedded weapon system software was the result. Additionally, the meetings resulted in a proposed change to the current policy.

Several issues remained unsettled. They included the question of who funds software changes that impact other systems and what regulatory procedures were in place requiring the true cost of a system to be known up front. To resolve these issues required the involvement of HQ TRADOC, since they were responsible for the interoperability of weapons systems. The main thrust was that if the development of a new system impacted other systems, the developer should be responsible for funding the changes to the other systems. Although TRADOC had the responsibility for system interoperability, it was not always known which systems would be impacted in time to fund for the changes. This lack of information caused the true cost of the new system to be unknown. Once resolved, the Army policy on LCSS should be published. The division would work with the DA and TRADOC staffs on this issue.

New procedures were being implemented to support the LCSECs in acquiring software and hardware. An Information Management Plan is being drafted to include all automation initiatives for the centers. The Approval Authority for LCSS acquisitions would reside with the DCSDEA, depending upon the funding level. The ultimate goal was to develop the plan for DA's approval for a five to seven year period. A data base would be developed to track all acquisition; maintained and monitored by the division.

Software Engineer Interns. New procedures are being imposed on the recruitment and selection of software engineer interns. Currently, all interns were hired from local universities. Under the new procedure, interns could be selected from within the government and trained as software engineers. This would also reduce the number of participants lost to private industry.

Command, Control, Communications and Intelligence (C3I) Division. The most significant issues facing this division in FY89 included initial fielding of the REMBASS (Remotely Monitored Battlefield

Sensor System), early warning and target development system; initial fielding of the TRAFFIC JAM AN/TQL-17A(V)3 countermeasures system; continued fieldings of the Mobile Subscriber Equipment (MSE) and Single Channel Ground and Airborne Radio System (SINGARS) communications systems, and the award of a second source for the SINGARS program; continued fieldings of the QUICKFIX EH-60A and TACJAM AN/MLQ-34 countermeasures systems; fielding of Maneuver Control Systems (MCS) Non-Development Items (NDI) of hardware to the regular Army as a proof of principle for the Army Tactical Command and Control System (ATCCS) and to provide troop experience with the tactical use of data processing systems in field operations; and application of ATCCS Common Hardware in full-scale development of the Advanced Field Artillery Tactical Data System (AFATDS), Forward Area Air Defense - Command and Control (AAD-C3), Combat Service Support Control System (CSSCS) and MSC.

Remotely Monitored Battlefield Sensor System (REMBASS). REMBASS is a ground-based remotely monitored surveillance, early warning and target development system capable of day/night worldwide operation under all weather conditions. It was composed of modular components that could be combined to form various system configurations that were tailored to unique mission scenario. REMBASS components were fielded in October 1988 by the 10th Infantry Division at Fort Drum, NY, and in January 1989 by the 101st Air Assault Division at Fort Campbell, KY. In September 1989, an 18-month research and development contract was awarded, pending the outcome of a protest, to General Electric for 12 monitors and repeater programmers for the Improved-REMBASS system. This system was to use preplanned product improvements (P3I) to provide a down-sized set of system components.

TRAFFIC JAM AN/TQL-17A(V)3 Countermeasures System. The TRAFFIC JAM AN/TQL-17A(V)3 is a high power communications jamming system carried in the Commercial Utility Cargo Vehicle (CUCV). A total of 27 systems were fielded in Military Intelligence Brigades in FY89: 3 to the 102th in Korea; 3 to the 311th of Forces Command (FORSCOM); 3 to the Training and Doctrine Command (TRADOC) at Fort Devens, MA; 2 to TRADOC at Fort Huachuca, AZ; and 16 to the 511th, 533rd, 501st, 502nd, 108th, and 103rd in Germany.

Mobile Subscriber Equipment (MSE). MSE is an advanced, secure and survivable telephone system with data and facsimile capabilities which enables Army commanders and their staffs to exercise command and control from mobile platforms and static command posts throughout an entire five division corps area. MSE was initially fielded in February 1988. A total of three MSE coherent unit sets (CUS) were delivered to III Corps units at Fort Hood, TX, in FY89. A total of four MSE CUS were delivered by the end of FY89 by the prime contractor, GTE. In FY90, fielding of the MSE in the III Corps would continue and the fielding of the system to the V Corps would begin.

Single Channel Ground and Airborne Radio System (SINGARS). SINGARS is the first new combat net radio since the AN/VRC-12 and AN/PRC-77 families of radios were fielded in the 1960s. SINGARS was initially fielded in December 1987. There were 4,286 SINGARS ground radios delivered by the prime contractor, ITT, in FY89. Together with the 1,435 ground radios delivered in previous years, this made a total of 5,721 ground radios delivered through the end of FY89. A total of 190 SINGARS aircraft radios were also delivered by the contractor, ITT.

A contract was let to a second source, General Dynamics, for the SINGARS program in July 1988. The contract was for a base year and two priced options for a total of 12,650 radios. The initial six prototypes were delivered in first quarter FY89 and tested in single channel mode. These tests were completed successfully in January 1989. The tests on the first six pilot production units built in the San Diego, California plant were completed in July 1989. A new production facility in Tallahassee, Florida, was ready for Lease Hold Improvements (LHI) in March 1989. These LHIs were completed in June 1989. A Production Failure Analysis Laboratory was completed at the Florida facility in September 1989. Five Pilot Production radios built in the Florida facility were scheduled to complete initial testing in January 1990.

QUICKFIX EH-60A Countermeasures System. The QUICKFIX EH-60A was a communications jamming emitter intercept/locating system carried in the BLACKHAWK Helicopter. A total of 33 systems were fielded in FY89: 12 to the U.S. Army Europe (USAREUR); 3 to Fort Bragg, NC; 3 to Fort Ord, CA; 3 to Fort Stewart, GA; 6 to Fort Hood, TX; 3 to Fort Campbell, KY; and 3 to Schofield Barracks, HI. Through the end of FY89, 48 total systems had been fielded.

TACJAM AN/MLQ-34 Countermeasures System. The TACJAM AN/MLQ-34 was a high power communications jamming system carried in the M1015 Tracked Vehicle. A total of 29 systems were fielded in FY89: 3 to Fort Stewart, GA; 2 to Fort Bliss, TX; 9 to Fort Hood, TX; 3 to Fort Lewis, WA; 3 to Fort Riley, KS; 3 to Fort Carson, CO; and 6 to Korea. Through the end of FY89, 60 total systems had been fielded.

Acquisition of Common Hardware/Software (CHS) for Application in the Army Tactical Command and Control System (ATCCS). In 1986, the Under Secretary of the Army and the Vice Chief of Staff, Army, directed the acquisition of nondevelopmental items for a standard set of common hardware and shared common software for utilization in all systems and subsystems of ATCCS, where feasible. Common Hardware/Software is the most effective and economic means of achieving integration and interoperability of the five functional areas of the battlefield to provide the commander with full command, control and communications wherever he may be on the battlefield.

In August 1988, a contract was awarded to MILTOPE, Inc. The Ford Aerospace Communications Corp., Hewlett Packard, General Telephone and Electronics and Analytics, Inc. were members of the MILTOPE team. In the third and fourth quarter FY89, ATCCS Common hardware was delivered to Thompson Ramo Woolridge (TRW) Corporation for use in the Air Defense, Maneuver Control and Combat Service Support Command and Control Systems and to Magnavox Corporation for the Advanced Field Artillery Tactical Data System. The ATCCS Systems Engineering and Integration Contract was awarded to General Electric in August 1989.

In its evolution from a full militarized command and control system to a diversified system of nondevelopmental items (NDI) built around a small core of militarized Tactical Computer Terminals (TCT), the Maneuver Control System (MCS) became the prototype for the Army Tactical Command and Control System (ATCCS). The MCS operational software current in FY89 was, in reality, the proof of principle for ATCCS.

TRW was the system integration contractor for MCS. Production deliveries of MCS NDI equipment, consisting of more than 1,500 assorted Tactical Computer Processors (TCP) and Analyst Consoles (AC), by Ford Aerospace Communication Corporation began in the third quarter of FY89 and was to be completed in 1990. The TCPs and ACs were ruggedized applications of commercial Hewlett Packard computers. ATCCS Common Hardware will use ruggedized versions of similar Hewlett Packard computers. The PM OPTADS (Operations Tactical Data Systems) was to attempt to field MCS NDI equipment to USAREUR and the rest of the Army in FY90.

Advanced Field Artillery Tactical Data System (AFATDS). AFATDS is the Army's objective fire support command and control system within the Army Tactical Command and Control System (ATCCS). AFATDS would enable the Army to meet the requirements of the Air Land Battle Doctrine and would replace the Field Artillery Tactical Fire Direction System (TACFIRE). AFATDS would support all elements of U.S. Army fire support systems and fire support elements of Joint and Allied Services. It would use the ATCCS Common Hardware, which would be small and light enough to configure the fire direction centers into vehicles that were organic to the supported forces, and would have a significantly reduced power requirement over the current system. This would also improve mobility, reduce infrared signatures and reduce setup and teardown times.

AFATDS's prime contractor, Magnavox, successfully completed the Concept Evaluation Phase in the third quarter of FY89. Army Systems Acquisition Review Council (ASARC) and Defense Acquisition Board (DAB) Milestone II approval to proceed into Full-Scale Development was granted in the fourth quarter of FY89. AFATDS operational software was being recompiled/rewritten in Ada software in order to be usable in the Common Hardware.

Special Operations Division

The most significant issues handled by the division included the disestablishment of the Special Operations Forces (SOF) Mission Area, participation in development of a Memorandum of Agreement (MOA) between the U.S. Army and U.S. Special Operations Command (USSOCOM), serving as the AMC designated focal point for providing support for the National Drug Control Program, the AMC innovative acquisition of the Ranger Anti-Armor/Anti-Personnel Weapon System (RAAWS), and the SOF \$108M increase in funds.

Disestablishment of the SOF Mission Area. The Office of the Secretary of Defense (OSD) directed the transfer of all SOF-unique resources to Program 11 under the direct control of CINC USSOCOM (Commander-in-Chief U.S. Special Operations Command). The Total Obligation Authority transfer enabled CINC USSOCOM to submit a separate Program Objective Memorandum (POM) FY92-97 directly to OSD. There was no longer a need for the Army to maintain a SOF Mission Area to plan for SOF-unique RDA. Therefore, the SOF Mission Area was disestablished. AMC would coordinate directly with USSOCOM to manage SOF RDA programs.

Participation in Development of a Memorandum of Agreement Between the U.S. Army and USSOCOM. Defense appropriations legislation in FY88 and 89 established the USSOCOM as a "head of agency" with the authority to manage funds, develop requirements and acquire materiel for SOF. The period from 1989 through 1990 would be one of transition in which the Department of the Army (HQDA) would continue to manage and, subsequently, transfer funds management and actions to USSOCOM. Prior to the final phase of this transition, USSOCOM and HQDA agreed that a MOA would be used to define and implement relationships and responsibilities between the two commands. HQDA directed HQ AMC to participate in the development of such an MOA along with the other major Army commands.

HQ AMC participated in development of the U.S. Army and USSOCOM MOA through the Special Operations Division of the DCS for Development, Engineering and Acquisition (AMCDE). The division assisted other Army representatives in developing a basic MOA document and two specific annexes, Annex C: Logistics Support and Annex D: Development and Acquisition. Annex C was negotiated in detail between HQDA, HQ AMC and USSOCOM representatives to carefully define the Army Materiel Developer role. Principle to these negotiations was the concept that AMC would manage its own major subordinate commands and activities and not, as USSOCOM desired, permit USSOCOM program managers to functionally control and direct AMC organizations and management. Annex C was later dropped, based upon an agreement that all logistics support of SOF within the Army would be governed strictly by Army directives and regulations.

The Army side of Annex D was developed, largely, by the division from a draft USSOCOM document provided to the office of the Assistant Secretary of the Army for Research Development and Acquisition (ASARDA). The principle issues of this document for the U.S. Army were: (1) The U.S. Army would service USSOCOM as an external customer, such as another service; (2) The U.S. Army would support all materiel requirements from USSOCOM in accordance with USSOCOM requests; (3) All materiel to be fielded to U.S. Army troops and maintained by the Army would be done in accordance with DA directives and U.S. Army regulations; and (4) USSOCOM would have management input to all of their Army executed programs through direct management participation in decision reviews. The U.S. Army -

USSOCOM MOA negotiations were concluded on 15 November and the final document prepared for signature not later than December 1989.

The AMC Designated Focal Point for Providing Support for the National Drug Control Program. The Anti-Drug Abuse Act of 1988 (PL 100-690) established the Office of National Drug Control Policy and tasked that office to develop a plan for the use of DOD facilities. The use of several AMC activities were specifically called for in the public law, including the Night Vision Laboratory for night vision research and development, CECOM for ground sensor research and development, and the Chemical Research, Development and Engineering Center (CRDEC) for chemical/biosensor research and development.²⁰ The FY89 Appropriations Act PL 100-456, without provision of specific funding, mandated DOD support and encouraged use of DOD research and development (R&D) facilities and capabilities in the war against drugs. The FY90 draft appropriations bill specified \$450M in FY90 and \$600M in FY91.

On 18 September 1989, GEN Tuttle appointed his DCS for Development, Engineering and Acquisition, MG Rigby, as the Command Coordinator for AMC actions in support of National Anti-Drug Policy. Although that appointment did not usurp existing organizational lines, it did establish a single focal point for AMC counter-narcotics efforts. The CG, AMC briefed AMC actions in the war against drugs at the mid-October 1989 Commander's Conference. In that briefing, GEN Tuttle noted that AMC had processed \$75M in loans of equipment to law enforcement agencies. AMC had also been providing R&D support to law enforcement agencies. Efforts were underway to generate a framework to enable more effective R&D support through existing AMC organizational lines and to coordinate the other AMC activities in support of counter-narcotics.

Acquisition of the Ranger Anti-Armor/Anti-Personnel Weapon System (RAAWS). The SOF Modernization Action Plan indicated need for a RAAWS to replace the M67 Recoilless Rifle (R/R). A HQDA 1987 market survey indicated that the Carl-Gustaf 84mm Model M3 R/R manufactured by FFV Ord, Sweden, was the best candidate for satisfying the RAAWS requirement and the Special Operations Division was the AMC focal point for coordinating the \$20M RAAWS acquisition program. The Armaments Research, Development and Engineering Center (ARDEC) negotiated a loan agreement with FFV for nine M3 weapons for an Army Development and Employment Agency (ADEA) appraisal. AMC's DCS for International Cooperative Programs provided International Materiel Evaluation funds used to purchase ammunition for the M3, including High Explosive Anti-Tank, High Explosive, Smoke, illumination, target practice, and 7.62mm ammunition for the Swedish Carl-Gustaf Model M3 Recoilless Weapon.

The funds were also used for M3 training, for ARDEC support for the ADEA appraisal, and for the weapons, ammunition and support required for follow-on safety testing and type classification. AMC's U.S. Army Special Projects Support Authority (USA SPSA) based at Fort Belvoir, Virginia, procured 3 night sights to be used with the M3 during ADEA's appraisal. The ADEA M3 appraisal, held from April to August 1988 using Ranger personnel, was favorable. The U.S. Army Special Operations Agency concluded the ADEA appraisal satisfied the Operational Test requirements for RAAWS. In July 1988 HQDA issued a message which constituted a DA Requirements Document, after receipt of a May 88 Ranger Operational Need Statement, endorsed by the 1st Special Operations Command (SOCOM). The M3 was selected as the RAAWS on 29 September 1988 from candidate proposals submitted in response to market survey compiled by ARDEC.

On 25 January 1989 the Under Secretary of the Army (Mr. Stone) approved a RAAWS Justification, and a Justification and Approval (J&A) submitted on 14 October 1988 by ARDEC. The RAAWS Type Classification-Generic package was signed on 6 February 1989. The RAAWS' Test and Evaluation Master Plan (TEMP) and Integrated Logistics Support Plan (ILSP) was approved on 6 June 1989. The AT-4

²⁰Extract from PL 100-690, enclosed in DEA AHR submission.

weapon jump pack was to be used for the RAAWS. Replacement parts for 50 of M3 weapons would be managed and stocked by USA SPSA in accord with an agreement between the Special Operations Division, PM, RAAWS U.S. Army Special Operations Agency, Program/Budget/Resources Division, Logistics Support Branch, and AMC ADCS for SOF.

FFV Ord's 4 April 1989 response to U.S. Government's 8 February 1989 sole source solicitation (based on 11 October 1988 market survey) indicated that the Swedish Government required that the U.S. Government sign a Declaration of End User (EUC) prior to the RAAWS contract award. The Swedish requirement for an EUC was relatively new, and was based, ironically, on U.S. Commerce Department regulations on the control of high technology/weapons transfers which Sweden had developed in response to prodding by the U.S. Government.²¹

On 21 July 1989, ARDEC forwarded through AMC to Mr. George E. Dausman, HQDA Deputy Assistant Secretary for Procurement, RDA, a memorandum requesting EUC signature authority. Mr. Dausman, who was also the acting Army Acquisition Executive (AAE), responded on 1 August 1989 in a memorandum indicating that the Army did not consider EUCs to be in the U.S. Government's best interest, that DA had requested EUC policy guidance from OSD, and that ARDEC's request was denied until further guidance was provided by OSD. On 4 August 1989 MG Rigby sent a memorandum to Mr. Dausman stating that AMC would negotiate a contract to the point of award. If the EUC was still required at that time and the signature authority was not provided, the program could not proceed. On 15 August 1989 the new AAE, Mr. Stone, sent a memorandum to the PM, RAAWS granting the RAAWS Procurement Contracting Office (PCO) a "one time, non-precedence setting, authority to sign End User Certificates" for RAAWS on behalf of the Army.²²

On 8 September 1989, a RAAWS test hardware contract with multi-year production options was awarded. On 20 October 1989, test hardware was delivered to TECOM and testing began. Other RAAWS test activities include Dugway and Yuma Proving Grounds and White Sands Missile Range. The RAAWS was to be Type Classified Limited Production Urgent and the production contract was to be awarded at the completion of the test. Fielding to the first unit was scheduled for the fourth quarter of FY90.

SOF \$108M Increase. In the Appropriations Act of FY89, a supplementary funding package for Major Funded Program-Eleven (MFP-11) was included as a mandated enhancement of the Special Operations Forces Modernization of Radio (SOFMOD) programs. This funding increase was restricted to expenditure and was to expire by 30 September 1989. Though provided for in the legislative acts of October 1989, these funds were withheld for legislative and administrative reasons until nearly the end of second quarter, effectively giving AMC access to these funds for only seven months.

USSOCOM, as the SOF proponent command and head of agency, selected nine systems to be funded by the \$108M enhancement. Two of these were deleted upon instruction of USSOCOM, and those funds were diverted to two other systems. Through intensive management by the HQ AMC Special Operations Division, all the contracts were completed and the funds obligated before the close of the fiscal year. This was a significant accomplishment on the part of the implementing command, the Communications and

²¹MEMORANDUM FOR MILITARY DEPUTY TO THE ASSISTANT SECRETARY OF THE ARMY (RESEARCH, DEVELOPMENT AND ACQUISITION), SUBJECT: Ranger Anti-Armor Anti-Personnel Weapons system (RAAWS)--ACTION MEMORANDUM, nd, enclosed in DEA AHR submission for FY89.

²²MEMORANDUM from Army Acquisition Executive FOR CPT. R. H. GAIER III, RAAWS SYSTEM MANAGER, SUBJECT: Authority to Sign End User Certificate, 15 Aug 89.

Electronics Command (CECOM), and a letter of appreciation was addressed by MG Rigby, DCSDEA, to the Commanding General, CECOM and his Special Operations Forces Projects Management Office.

Aviation Division

The most significant issues handled by this division in FY89 included the Apache Milestone 1b ASARC approval, the armed AHIP, the UH-60L MS-III decision, and aircraft ultra light camouflage nets (ULCANS).

Aircraft Ultra Light Camouflage Nets (ULCANS). The ULCANS was to be a light weight, fine mesh camouflage net system that was easy to install, did not exhibit the snagging characteristic of conventional nets, and would effectively conceal Army fixed wing aircraft and helicopters.

The current program was based on a request from GEN Saint, CINCUSAREUR, to GEN RisCassi, Vice Chief of Staff of the Army, with a copy to GEN Wagner, for prototype camouflage nets for the APACHE helicopter to be used in REFORGER 90, a major exercise held in Europe. Based on this request, a quick response action was initiated by the Aviation Division to provide funds for the prototype nets. One hundred thousand dollars in 6.3 funding was provided to the Camouflage Laboratory, BRDEC, to purchase approximately 20 nets. A draft test plan was written by the division, and a program of limited testing during REFORGER 90 was coordinated with, and supported by USAREUR.

This small but proactive effort stimulated the interest of other activities involved in ULCANS development, including personnel at the U.S. Army Aviation Center and School (USAAVNC) who had already prepared a draft Required Operating Capability (ROC). Because of this interest, BRDEC supported by the division put together a joint working group (JWG) to coordinate preparation of an ULCANS acquisition strategy. The JWG determined that the nets could be procured as a Non-Developmental Item (NDI), and that the REFORGER 90 testing could be configured to satisfy requirements for early user testing required in the acquisition process. The responsibility for managing the user testing was shifted to TRADOC's Test and Experimentation Command Aviation Battalion, and the draft test plan was used by the aviation battalion to generate a Concept Evaluation Plan (CEP). The Acquisition Strategy and AVNBD CEP were coordinated with USAREUR during an October 1989 visit that also provided an opportunity to instruct USAREUR aviation personnel in the use of the nets.

In planning this effort, emphasis was placed upon streamlining the acquisition process. It was projected that the ULCANS could be provided to the user community in approximately two years, if the REFORGER 90 tests were successful, and if necessary funding could be obtained.

Apache. The Longbow system is an improvement in the war fighting capability of the AH-64A Apache helicopter that was under development. It consists of three parts: A fire control radar mounted on the aircraft, radio frequency (RF) seekers for the HELLFIRE missiles, and modifications to the AH-64 to accept the radar system. It was being obtained under a streamlined acquisition program with a Proof of Principle (POP) and Development Production Proveout (DPP) phase. The contract for the initial design portion of the DPP was awarded in September 1989 following a Milestone 1b ASARC decision approving continuation of the program.

An ad-hoc working group was developed to facilitate Army preparation for the major milestone reviews and a "Red-Team" was formed prior to the ASARC to provide a technical risk assessment of radar and missile seeker development. The results of the assessment were briefed to PEO, Aviation and PM, Apache.

OH-58D Armed (Armed AHIP). The Armed AHIP (Army Helicopter Improvement Program) would include Air-to-Air Stinger as well as air-to-ground weapons including HELLFIRE missiles, Hydra-70 rockets, and a .50 calibre machine gun.

The Armed AHIP working group met on 30 Jun 89 to identify remaining technical and programmatic issues and to initiate action for short term correction of problems. A pre-MARB (Materiel Action Review Board) was held on 19 July 1989 to insure that all issues were being dealt with effectively. The MARB was held the following day and the Pre-ASARC was held on 8 August 1989 as planned. The Pre-ASARC supported the Armed AHIP. LTG Pihl decided, with the concurrence of the Pre-ASARC members, to let this meeting also serve as the ASARC. A determination was made to go forward with the Armed AHIP program pending support by General RisCassi and the availability of funding. Subsequent to this meeting, funding was identified and a modified budget was prepared, which was approved by OSD on 1 November 1989 and provided funding starting in FY91.

UH-60L Milestone Three Decision. The UH-60 BLACK HAWK was a twin turbine engine, single rotor utility helicopter capable of carrying a crew of three and 11 combat-equipped troops or an external load up to 8,000 lbs. The UH-60L was an upgraded version of the UH-60A. It incorporated the T700-GE-701C engine and the Improved Durability Gearbox for increased lift capability at higher altitudes and temperatures.

The Aviation Division participated in the UH-60L Materiel Acquisition Review Board (MARB) and provided HQ AMC concurrence. The purpose of the MARB was to review UH-60L documentation and issues prior to the milestone three decision. On 28 September 1989, a DA level review was held, and approval was obtained for type classification, production, and fielding of the UH-60L BLACK HAWK Helicopter.

Missiles and Weapons Division

The most significant issues handled by this division included the non-line of sight aspects of air defense, the pedestal mounted stinger, the Mark XV Cooperative Identification Friend or Foe (IFF) System, the Intermediate-Range Nuclear Forces (INF) Treaty Compliance Certification, and the selection by the CG, AMC of the Advanced Antitank Weapon System. A variety of other issues were also handled by the Division.

Organizational Changes. Two programs were transferred from PEO/PM management to AMC management in FY89. Management of the Joint Tactical Missile Defense (JTMD) program was transferred from the Program Executive Officer, Air Defense, to the CG, U.S. Army Missile Command in the second quarter of FY89. Management of the Hawk Air Defense System was transferred from the Program Executive Officer, Air Defense, to the CG, U.S. Army Missile Command in the fourth quarter of FY89.

Non-Line of Sight Air Defense Technology. Non-Line of Sight (NLOS) would apply new technology in air defense. The Fiber Optic Guided Missile (FOG-M) System would be a vital component of the Forward Area Air Defense System (FAADS). It would consist of a missile, missile launcher and fire control ground station mounted on a HMMWV (light version) or MLRS (heavy version). It would provide air defense protection to the maneuver force against masked, standoff rotary wing aircraft. FOG-M, the product of a successful advanced development program at the U.S. Army Missile Command (MICOM) Research, Development and Engineering Center (RDEC), was the system that satisfied the Non-Line-of-Sight (NLOS) requirement of the FAADS. Congressional language, issued in December 1987, requires completion of the Initial Operational Evaluation (IOE) of FOG-M and accelerated development and fielding of the Block I system. This resulted in the current Acquisition Strategy.

Nine service type contracts for engineering support and fabrication of hardware to support the IOE of the FOG-M system were awarded. Both the TV Seeker Missile and the light fire units were fabricated, and the system was tested in preparation for captive flight and missile flight tests. IOE was designed to

establish the potential combat effectiveness of the FOG-M concept and to incorporate lessons learned into the FSD program.

The IOE was divided into three phases: Captive Flight Test (CFT); Force Development & Experimentation (FDT&E); and operational missile firings. IOE utilized semi-tactical prototype hardware consisting of a gunner station and equipment bay mounted on a HMMWV chassis. CFT runs were conducted at both Redstone Arsenal, Alabama, and White Sands Missile Range (WSMR), New Mexico. Both friendly and hostile rotary wing and armor vehicles were presented in accordance with approved threat doctrine and tactics. FDT&E was conducted at WSMR from March to May 1989. FDT&E was used to collect baseline information for the development of procedures, tactics and doctrine at the Fire Unit crew level. The missile fire subtest, begun in July 1989, consisted of 10 single missile firings against hostile rotary wing and armor targets and was completed in September 1989. The Extended User Evaluation (EUE) began at Ft. Bliss, Texas, in August 1989. It was to provide early user feedback on tactics and doctrine development and lessons learned for FSD.

MICOM's Research Development and Engineering Center, in conjunction with NLOS Program Office, supported the technology transfer of FOG-M engineering data to the Boeing-Hughes team. The technology transfer process was formalized with the formation of the Technology Transfer Steering Committee, consisting of PM, PEO, test, Prime contractor and user representatives. The Steering Committee was supervised by the General Officers Overwatch Group, headed by CG MICOM.

The NLOS Program Office continued to support the MICOM RDEC Technical Risk Reduction (TRR) program. The TRR was designed to demonstrate complementary designs and hardware, incorporating the lessons learned into the FSD design in an effort to reduce technical, cost and schedule risk. In April 1989, a Cost Reduction Working Group was initiated. Its objective was to drive down NLOS development, procurement, and operating and support costs without compromising quality or performance. The conceptual theme of this group is reflected in the name "ECONOFOG."

After a review by the Conventional Systems Committee of the Defense Acquisition Board (DAB) in October 1987, the final RFP for the FSD contract for the NLOS FOG-M system had been released 9 November 1987 and subsequently amended in February 1988 to focus on Block I requirements.

Pedestal Mounted Stinger (PMS). PMS was the Non-Developmental Item (NDI) solution to the Forward Area Air Defense System Line of Sight-Rear (LOS-R) requirement and would be employed in and behind the battalion rear areas. "Avenger" was adopted as the official name for PMS in June 1989. PMS first production units were delivered November 1988, and FUE was achieved 29 April 1989. PMS completed Force Development Test and Experimentation I (FDTE I) in July 1988 and FDTE II in March 1989. The FDTE I & II test objectives were met. PMS was given a Type Classification (TC)-Limited Procurement Urgent (LPU) extension in September 1988, to procure an additional 100 fire units in FY89. PMS was Type Classified-Standard at the ASARC IIIB in January 1990. Initial Operational Test and Evaluation of the Avenger system was completed in September 1989.

Mark XV Cooperative Identification Friend or Foe (IFF) System. The requirement for the Mark XV IFF was established by the DOD in response to a recognized high priority military need for a significantly improved identification capability. This effort began with U.S. participation in multinational efforts to define allied identification requirements. NATO air defense identification requirements were documented in Report AC/259-D/556, Special Task Group on Future NATO Identification System, dated March 1977 and NATO Task Force V Report, dated 1 March 1978. A NATO Standardization Agreement (STANAG 4162) had been developed to address these NATO requirements. Air Force requirements were further delineated by the USAF Tactical Air Force (TAF) Statements of Operation Need (SON) 304-79 for Air-to-Air Target Identification, and TAF SON 305-79 for Surface-to Air Target Identification, both dated 30

January 1979. U.S. Service requirements were documented in the Joint Mission Element Need Statement (JMENS) for Improved Identification Capability dated 30 September 1980.

In May 1983, two contracts were awarded to demonstrate with brassboards a D-Band waveform, which the U.S. had proposed for NATO acceptance. Mark XV IFF requirements were documented in Multi-Command Required Operational Capabilities (MROC) 20-83. A DSARC 1 review was completed on 24 July 1984. Bendix, the prime contractor, began full scale-development in February 1989. A leader/follower approach will be used with Bendix as leader, and Raytheon as follower, to jointly design the IFF system during FSD and to develop independent production capabilities during LRIP (Low Rate Initial Production). To reduce the cost of a NATO-interoperable IFF system, the RFP included a NATO cooperation Incentive Provision which would allow the prime to subcontract to other NATO nations. The Italian contractor ITALTEL cooperated in development as a direct subcontractor to Bendix under the U.S./Italian Memorandum of Understanding (MOU).

Intermediate-Range Nuclear Forces (INF) Treaty Compliance Certification. As part of the implementation of the INF treaty, the Secretary of the Army must certify to OSD every six months that no existing or contemplated Army ballistic or cruise missile research, development, or acquisition program was in violation of the INF Treaty. HQDA tasked Commanders of AMC, TRADOC, the Strategic Defense Command (SDC) and the Operational Test and Evaluation Agency (OTEA) to certify by letter that all existing or contemplated Army missile programs had been reviewed and that the agency's areas of responsibilities, as indicated in the plan, were in compliance. In response to this, HQ AMC, under the CG's signature, issued two letters to HQDA, in April and October 1989, stating AMC compliance with the INF Treaty.

Source Selection of the Advanced Antitank Weapon System. The CG, AMC, after being appointed by the ASARDA in late 1987 as the Source Selection Authority for the Advanced Antitank Weapon System, had the full responsibility and authority to select the source for award of a full-scale development contract. His responsibilities, including proper conduct of the source selection process, were essentially carried out from August 1988 through 7 February 1989 when the CG AMC met with the ASARDA and the Under Secretary of Army to notify them of his selection decision. The winner was Texas Instruments using a fire-and-forget technology. Other candidates which had been evaluated included a Laser-Beam-Rider missile developed by Ford Aerospace and a Fiber-Optics-Guidance missile developed by Hughes.

Stinger Reprogrammable Microprocessor (RMP). Deployment to USAREUR of the Stinger with the reprogrammable microprocessor was delayed to further improve missile performance against rotary wing threat using advanced countermeasures. The Program Manager; General Dynamics (GD), the developer; MICOM laboratories; and OSD arrived at a solution which was successfully tested in May 1989. Although the solution did not correct 100% of problem areas it proved adequate for OSD to release funds and to approve the award of the last year of 3-year multiyear contract to GD and a second option to Raytheon to achieve full production levels. USAREUR's FUE was scheduled for November 1989. GD continued to address deficiencies and should complete engineering development efforts by March 1990.

Line of Sight-Forward-Heavy (LOS-F-H). All four fire units in the FY88 contract were delivered by June 1989. These fire units would be utilized for the Force Development Test and Experimentation II and the Initial Operational Test Evaluation (IOTE) starting in October 1989 and January 1990 respectively. Due to changes in budgetary and testing conditions, the full-scale production decision, Milestone (MS) III originally scheduled for March 1990 was changed to a MS IIIA in June 1990 to be followed by a MS IIIB in March 1991.

PATRIOT Air Defense System. Six backfill fire units were fielded to CONUS battalions. Delivery of the first stand-off jammer counter missile occurred in December 1988. Fielding of the PATRIOT anti-tactical missile capability (PAC-1), a software modification, was completed in December 1988.

PATRIOT anti-tactical missile capability (PAC-2), a modification of the warhead and fuze, entered production in February 1989. The anti-radiation decoy full-scale development contract was awarded. The Extended Air Defense Memorandum of Agreement was signed in February 1989, with the Federal Republic of Germany. The automatic command post for PATRIOT was approved for OCONUS deployment.

HAWK Air Defense System. Procurement of the Phase III product improvements continued. Procurement of the Field Maintenance Equipment Modification was approved. A contract was awarded in FY89 to start development of the mobility product improvement. Production of the first of 48 test program sets that interface with the intermediate forward test equipment (IFTE) began in September 1989.

Joint Tactical Missile Defense (JTMD). The JTMD Special Task Force (STF) completed the Tactical Missile Defense (TMD) Action Plan. Quiet Sunset, a targeting experiment, was conducted in the European Command. PATRIOT was tested in a counterlaunch mode. The multi-mode seeker demonstration with the Federal Republic of Germany was initiated. Development work continued on active defense warhead lethality. The JTMD Master Plan was completed and submitted to Congress in July 1989.

Supplementary Interim Medium Antitank System (SIMATS). The Army selected DRAGON II (the Army's warhead upgrade of basic DRAGON) in April 1989 as its interim system. It was unclear whether Congress would accept the Army's decision. The FY90 Congressional Conference report on Authorization directed additional side-by-side testing with the Swedish Bofors BILL and the MILAN. At the request of the Office of the Secretary of Defense, live fire testing of the DRAGON I and DRAGON II was initiated against actual targets. Headquarters AMC assisted in resolving type and source of funds for the live fire testing. These tests would provide more accurate information on how much more effective the DRAGON II was than the DRAGON I. Headquarters AMC assisted in clarifying and correcting the reliability documentation necessary to initiate fielding of DRAGON II early in FY90.

HELLFIRE. During FY89, development of the HELLFIRE Optimized Missile System (HOMS) began. The HOMS would provide improvements in three areas: hardening the seeker against electro-optical countermeasures; increasing the lethality of the warhead; and increasing the number of different flight trajectories in order to optimize the target impact angle. The latter was to be accomplished by replacing the analog autopilot with a digital autopilot. Also during FY89, HQ AMC participated in a study performed by the Project Manager for the Target Acquisition Designator Systems - Pilot Night Vision sensors. This study determined a minimum cost approach to modifying the laser designators on the AH-64 Apache. Modification of the designators would maximize the effectiveness of the HOMS. The study concluded that the designators could be modified at a cost of \$4.5M RDTE and \$40,000 per helicopter.

Advanced Antitank Weapon System - Medium (AAWS-M). On 9 February 1989, the Army announced that the contracting team of Texas Instruments and Martin Marietta was selected to proceed into Full-scale Development. Defense Acquisition Board (DAB) II was completed on 1 June 1989. Contract award for a 36-month, Full-Scale Development effort was made on 21 June 1989. During the source selection process, the division provided a representative who acted as the headquarters AMC technical advisor to the Source Selection Authority (SSA). Additionally, administrative support was provided for meetings of the source selection advisory council and briefings to the SSA.

STINGRAY. During FY89, for the first time, the Mission Area Integration Team (TRADOC and AMC) recommended that the remainder of program development (Full Scale Engineering Development) be fully funded. Advanced Development was scheduled for completion in FY89 and risk reduction efforts would be completed in FY90. The Cost Operational and Effectiveness Analysis was planned for completion in June 1990. Phase I had shown that STINGRAY would have increased effectiveness and survivability in a heavy counter-counter measure environment. A significant change had been made in the STINGRAY concept of employment. The Assistant Deputy Chief of Staff for Operations (ADCOPS-FM), the Commander of the Combat Arms Concepts Development Agency (CACDA) and the Program Executive

Office-Intelligence and Electronic Warfare (PEO-I EW) redirected the program for integration of STINGRAY into the Heavy Force Modernization Plan. To date, development efforts had been in support of the Bradley Fighting Vehicle. With available funding, production could begin in FY93.

Improved Recovery Vehicle (IRV). After completion of the side-by-side comparative test of the BMY M88A1E1 and the General Dynamics Abrams Recovery Vehicle prototypes in FY88, the Army announced the selection of the M88A1E1 as the IRV in Dec 89. BMY's FSD contract was modified to incorporate several new requirements that evolved during the comparative test and the creation of the IRV purchase description. Follow-on technical testing began in January 1989. However, as a result of budgetary considerations, the Army terminated the IRV program in April 1989.

Abrams. General Wagner approved the Full Materiel Release of the M1A1 tank on 2 Feb 89 and the M1/IPM1 9 Jun 89. On 2 December 1988, the Defense Acquisition Board (DAB) reviewed the Abrams program and approved production of 516 Abrams tanks per year and development of Block II and procurement of the M1A2. It also requested the Army to budget for the layaway of the Detroit Arsenal Tank Plant. AMC was tasked to update the 1987 Economic Analysis on Operation of the Detroit Arsenal and the Lima Army Tank plants and to participate in additional cost analysis to support the M1A2. An additional DAB was requested. AMC participated in reviews leading up to the 24 May 89 ASARC, and the 7 June 1989 and 25 July 1989 Conventional Systems Committee Reviews. These reviews culminated in a 22 August 1989 DAB review. The DAB approved Full-scale Development of the Block II tank, but capped production at 516 tanks per year at an average unit cost of \$3.037M. This effectively limited M1A2 improvements to the Commander's Independent Thermal Viewer (CITV), Commander's Improved Weapon Station (ICWS) and the core tank (bussed data and power architecture).

M551 Sheridan. On 30 December 1988, HQDA issued a Directed Procurement tasking to AMC to provide a night fighting capability to 70 Sheridans of the XVIII ABN DIV. The night fighting improvements would be accomplished through the use of the Tank Thermal Sight (TTS) currently used on the M60A3 and the AN/VVS-3 driver's viewer currently used on the Bradley Fighting Vehicle System (BFVS). TTS's would be diverted from the M60A1 to M60A3 conversion program, and the driver's viewers would be procured under the existing BFVS contract. The improvements to the Sheridans would be completed by December 1990 at a total cost of \$4.19M (FY89 OMA \$1.03M, FY90 OMA \$2.71M, FY90 PA \$0.45M). The first prototype vehicle underwent successful test firing at Anniston Army Depot in June 1989. The program was on schedule to begin Development Test/Operational Test of two prototypes at Ft. Bragg in the first quarter of FY90. A production decision In-Process Review (IPR) was scheduled for the second quarter of FY90. First delivery of production units was scheduled for July 1990 at Ft. Bragg.

M2A2/M3A2 Bradley Fighting Vehicle System. During 1989, 600 A2 Bradleys were conditionally released for fielding in USAREUR. As the new models were issued, the basic Bradleys were being redeployed to CONUS units. Eventually all 2,300 basic Bradleys would be removed from Europe.

The 600hp A2 Bradley began production in May 1989. The greater engine horsepower restored the heavier A2 Bradley to its original mobility characteristics. An industrial modification program, completed in 1989 at the FMC plant, upgraded to 600hp many of the 500hp A2 models that had been produced since May 1988. The remaining 500 hp A2's, as well as the earlier A1 vehicles, would be modified to the 600hp A2 configuration. The 1987 ASARC decision to include reactive armor on the A2 was modified to provide a higher protection level and included a passive armor alternative. During 1989 a new specification and RFP was developed with a fielding objective for the applique armor in 1992.

Abrams Fire Prevention Program. Five fires in Abrams tanks at Ft. Irwin from 28 September to 24 October 1988 had prompted GEN Wagner to request a "full court press" to stop all tank fires Army-wide. DCSDEA tasked TACOM to lead an effort and coordinate an Army program. A multidisciplinary task force was headed by the TACOM Director of Maintenance and included PM-Abrams, Army Safety Center,

and Armor School. The Task Force originally identified the scope and nature of the fire problem and developed an Action Plan to reduce Abrams fires. The Action Plan delineated three "problem" areas (materiel, training, and awareness) and addressed fixes to attack each problem area. The Action Plan was updated monthly and the Task Force met quarterly to assess and modify actions.

Numerous actions were accomplished in FY89; including tech manual improvements, new and improved training materials, accelerated materiel improvements, improved fire reporting, and an improved Army awareness of fire problems. The number of fires was reduced from 60 in FY88 to 57 in FY89 in spite of an 18% increase in active fleet density and overall higher fleet age and mileage. FY89 was the first year that the number of fires had decreased from the previous year since FY83. A total of 1.1% of the fleet experienced a fire in FY89 compared to 1.5% in FY88. This was the lowest fire rate since FY84.

Armored Gun System (AGS). The AGS was funded in the Draft AMC/TRADOC FLRRDAP (Field Long Range Research, Development and Acquisition Plan). Funding was based on use of the USMC LAV-105 vehicle. A total of \$10.3M RDTE was funded in FY92 and FY93 for integration work on the new soft recoil 105mm cannon and airdrop/Low Altitude Parachute Extraction System (LAPES) capability improvements. A total of \$152.8M was funded in FY93, FY94, and FY95 for the procurement of 70 vehicles. The quantity of 70 was based on current requirements at XVIII Airborne Corps, including war reserve. There were indications from TRADOC and DCSOPS that this LAV-105 program might be used as a start-up wedge for a competitively selected NDI AGS for fielding to all light divisions. The Army arranged a loan of 16 LAV-25s from the USMC for testing at Ft. Bragg. The M551A1 Sheridans currently in use by the XVIII ABN CORPS would be supportable through FY98 with the procurement of 200 new engines scheduled for FY93/94.

Hypervelocity Missile (HVM)/Kinetic Energy Missile (KEM)/Line-Of-Sight-AntiTank (LOSAT). A HVM with a kinetic energy (KE) warhead (penetrator rod), launcher and Fire Control/Guidance System (FLIR) was the Kinetic Energy Missile (KEM) Module which entered the Prototype Development (PD) phase during 1989. The KEM Module on a platform/vehicle (currently a configured BRADLEY) was called LOSAT/KEM. The LOSAT/KEM was the Heavy Force Modernization (HFM) variant and a candidate for Advanced Antitank Weapons System-Heavy (AAWS-H) to replace TOW in mid-1990s. LOSAT/KEM was transitioned from the PEO Fire Support/PM Advanced Antitank Weapon System (PEO-FS/PM-AAWS), MICOM to the PEO-Heavy Force Modernization at TACOM PM-Line-of-Sight-Antitank at MICOM (PEO-HFM/PM-LOSAT) in mid-1989. Testing for the PD phase of the KEM Module and the integrated LOSAT/KEM was scheduled to start at White Sands Missile Range (WSMR) during second quarter of FY90.

Army Tactical Missile System (ATACMS). The decision to enter Low Rate Initial Production (LRIP) was made in February 1989 after a delay of four months to assess the flight test readiness of a new Control Actuator System (CAS) built by Simmonds Precision. The program completed 22 test flights and was meeting the reliability thresholds required to enter the Full-Scale Production phase. However, the development test phase scheduled for completion in November 1989 was extended until December because of delayed live fire testing, pending WSMR approval of the flight termination system. The delays in completion of DT/OT may require a decision to continue LRIP instead of starting Full-scale Production.

Follow-On To LANCE (FOTL). The FOTL system was a new surface-to-surface missile program conceived and initiated to replace the expiring service life of the LANCE system and to support nuclear force modernization efforts. The requirement for the FOTL became more urgent because of the Intermediate-Range Nuclear Forces (INF) treaty, which caused the U.S. Army to remove and destroy Pershing II surface-to-surface nuclear delivery missile systems which had the capability to strike at preselected targets within Soviet Union. The range of the FOTL was under the INF Treaty limit. The system, as envisioned to date, would utilize an MLRS type launcher. A Milestone 0 Acquisition Decision Memorandum (ADM), approved 23 August 1988, authorized the Army to proceed directly to the Milestone

II decision to enter into the full-scale development (FSD) phase with a proviso that the Army conduct a modified Milestone I program review with the Strategic Systems Committee (SSC). This review was required prior to release of Request for Proposal (RFP) for a competitive FSD with not to exceed production options.

Efforts during 1989 were to complete the concept definition phase and meet all necessary documentation requirements in support of a Department of the Army In-Process Review (DA-IPR) conducted on 13 September 1989. Guidance from this review focused on developing an Army consensus on the verifiability requirement, prior to the SSC review. Headquarters AMC participated at the FOTL ASARC Ad-Hoc Working Group and DA-IPR, and provided functional support to the Program Executive Officer and Project Manager, FOTL.

The FOTL modified Milestone I review with the SSC initially scheduled for 16 October 1989, was being held in abeyance pending resolution on the verifiability requirement. Because of the political impacts and short-range nuclear forces treaty arms control implications, the FOTL launcher decision was currently being revisited to decide whether the launcher should have distinguishable or indistinguishable characteristics. The issue was raised because of the possibility the short-range nuclear forces treaty might require nuclear and non-nuclear weapons to be visibly distinguishable.

Multiple Launch Rocket System - Terminal Guidance Warhead (MLRS-TGW). This program was an international program based on a MOU between the United Kingdom, France, Federal Republic of Germany and the U.S. The Component Demonstration Substage was completed in February 1989. The U.S. was ready to enter the System Demonstration Substage (SDS) in March 1989 after the ASARC/DAB Review in February 1989; however, the contract for the SDS phase was delayed until July 1989 when European funding issues were resolved. The U.S. share during FY90 was \$65.3M (40 percent of total funding).

Pershing. The Pershing II (PII), an intermediate-range surface-to-surface missile, provided the U.S. Army a capability to deliver nuclear fires at preselected targets within Soviet Union with significant accuracy. The Intermediate-Range Nuclear Forces (INF) Treaty, effective 1 June 1988, required the elimination of all existing, surface-to-surface, intermediate-range (1,000 to 5,500 kilometers), shorter-range (500 to 1,000 kilometers) ground-launched ballistic missiles and also ground-launched cruise missiles. It also banned all future missiles of these types. In accordance with the provisions of the INF Treaty, all PII and U.S. owned Pershing 1a (P1a) would be eliminated by 31 May 1991.

The elimination of P1a and PII missiles and launchers was initiated in 1988 and continued during 1989. Timelines to eliminate both P1a and PII assets were met as planned. All tactical P1a rocket motor stages were eliminated by July 1989. The Longhorn Army Ammunition Plant, Marshall, Texas, was the P1a elimination site. PII rocket motor stages are being disposed of at Longhorn and Pueblo Depot Activities. The Tooele Army Depot, Utah, was being prepared as an alternate elimination site under an Army contingency plan to ensure elimination of all assets by 31 May 1991.

In addition to providing staff support to the timely execution of the retrograde/elimination implementation plan for the Pershing missiles, the DCSDEA provided a staff responsibility for the issuance of HQ AMC letter to HQDA on a biannual basis. This letter certified that all existing or contemplated Army research, development, test and production programs, within the purview of AMC, were in compliance with the INF Treaty. As noted above, in April and October 1989, HQ AMC issued two such letters in support of this requirement.

During the execution phase of the INF Treaty retrograde/elimination implementation plan, AMC continued to provide support in maintaining tactical PII units at the highest possible state of readiness until

the last PII battery was removed prior to 31 May 1991. Monitoring and reporting of the reliability and maintainability status, as addressed in AR 702-3, would remain in effect until that time.

Operations and Plans Division

The most significant issues handled by the division included the Defense Acquisition Executive Summary (DAES), the Manage the Civilian Workforce to Budget Test, and International Rationalization, Standardization and Interoperability (RSI).

Defense Acquisition Executive Summary (DAES). The division was the DCS's focal point for DAES reporting. It evaluated and analyzed DAES reports from PEOs/PMs on a monthly basis and determined the appropriate office for distribution and action when necessary.

Manage the Civilian Workforce to Budget (MCB) Test. AMCDE continued to provide support to the HQ AMC MCB Working Group. The MCB would be implemented Army-wide (CONUS) in 1991. AMCDE furnished guidance on RDTE and procurement related issues to the MSCs and helped develop policy and guidance as appropriate. In addition, membership was provided to the Civilian Pay Ceiling Committee (CPC) which establishes and monitors fiscal year ceilings on payroll expenditures.

International Rationalization, Standardization and Interoperability. The responsibility for staff cognizance of international RSI matters pertaining to development, engineering and acquisition matters was transferred to DEA in August 1989. This responsibility included staffing and prioritizing development, engineering and acquisition related International Standardization Agreements (ISA) for ratification and prioritization for periodic assessment evaluation. The DCSDEA monitored the operations of the various international forums that fell within its staff cognizance to ensure that the AMC members properly represent AMC and Army positions on international matters.

Association of the United States Army. For the first time the United States Army Training and Doctrine Command and AMC hosted a symposium with the Association of the United States Army (AUSA). Held in Orlando, Florida, the symposium on Army Challenges in the 1990s was an excellent opportunity for senior commanders to communicate their current and future doctrine, materiel needs and procurement concepts to key defense industry executives involved in corporate planning.

RDTE Appropriations Management Division

The most significant issues handled by this division included Congressional Descriptive Summaries, CY89 Research, Development, Test and Evaluation (RDTE) (Non-PEO) Review, FY91 Budget Estimate Submission (BES) for RDTE Appropriation (Non-PEO), Environmental/Real Property Maintenance Activities/Backlog of Maintenance and Repair, and the FY89 RDTE Obligation Plan.

Congressional Descriptive Summaries. Congressional Descriptive Summaries (CDSs) for the Research, Development, Test, and Evaluation Appropriation, Army (RDTE,A) provided narrative information on all program elements and projects within the appropriation. Each CDS explained why the program was needed, how it would meet the Army's missions, and what shortfall it would satisfy. CDSs were prepared for all AMC RDTE programs and submitted to HQDA in January 1989 for submission to Congress in February 1989 to support the Amended FY 1990/1991 Biennial Budget request.

Research and Development Descriptive Summaries (RDDS). Research and Development Descriptive Summaries, like CDSs, provided narrative descriptions of the program elements and projects within the RDTE,A Appropriation. RDDS were prepared in August 1989 and submitted to Headquarters Department of the Army to support the Army's FY91 Amended Budget Estimate Submission to the Office of the Secretary of Defense in September 1989.

CY89 Research, Development, Test and Evaluation (RDTE) Program Review (Non-PEO). In March 1989, AMC conducted a review to determine AMC's FY89 unfinanced requirements. As requested by OASARDA (Office of the Assistant Secretary of the Army for Research, Development, and Acquisition), AMC subsequently presented OASARDA with unfinanced requirements, which totaled over \$114M. AMC recommended offsets in a few cases, and further recommended that remaining bills be resourced from potential bill payers resulting from the CY89 RDTE Execution Review.

An AMC Execution Review was conducted in April 1989, covering all FY88 and FY89 programs which did not meet the HQ AMC and/or HQDA execution goals. Each MSC/Separate Reporting Activity (SRA) briefed each of their qualifying projects to the headquarters staff. As a result of the in-depth analyses and input from the MSCs/SRAs, AMC's unfunded requirements were reduced by \$20M. An additional \$60M in billpayers were identified during the review.

The results of this review were briefed to OASARDA on 14 April 1989. AMC made recommendations to fund the remaining bills that were beyond the ability of this command to fund. The OASARDA concurred with all of AMC's solutions and recommendations and promised their full support on all actions beyond the scope of AMC. By the end of the fiscal year all the bills were paid with the exception of those that relied upon Congressional reprogramming authority. Of the \$23M requested, Congress allowed \$2.3M to be applied as offsets to fund higher priority DA requirements. In all, over \$110M in bills were financed.

FY91 Budget Estimate Submission (BES) for RDTE Appropriation (Non-PEO). In May, HQDA provided AMC a window of opportunity to fix broken or unexecutable FY91 programs which could not be restructured in the outyears without seriously impacting the program. The baseline for all adjustments was the Bush Amended Budget. This was a zero sum exercise by which an increase to a program must be offset with a corresponding decrease to another program. Adjustments for FY92-94 could be submitted only if they were the direct result of changes proposed to FY91.

After a thorough reassessment of the FY91 budget requirements and associated outyear tails, AMC submitted to HQDA 35 recommended budget adjustments, with justifications, to be included in the FY91 BES. These adjustments totaled \$97M in FY91; \$48M in FY92; \$52M in FY93; and \$23M in FY94. For information purposes, HQ AMC submitted an unfunded requirement for TECOM's large Backlog of Maintenance and Repair (BMAR) shortfall. All recommended bills and billpayer were accepted by HQDA.

Environmental/Real Property Maintenance Activities /Backlog of Maintenance and Repair. The long term underfunding of the RDTE Real Property Maintenance Activity (RPMA) program had led to severe deterioration of buildings, utility systems and road networks throughout the facilities. Annual Recurring Requirements (ARR) have been underfunded to the point that the BMAR had grown by the end of FY88 to a validated level exceeding \$126M. A deficiency of this magnitude could be neither adequately funded nor realistically executed. However, the level of funding must be raised to at least meet the annual maintenance requirements to prevent further real property erosion. Environmental and safety projects at RDTE installations were significant and presented serious funding problems as resources had not been previously programed for these efforts.

The FY89 environmental reprogramming approved by Congress in September 1989 funded \$2.3M of RDTE environmental and safety projects. AMC planned to submit another reprogramming in FY90. Positive steps were being taken to arrest the deterioration of facilities by adding \$144.3M to the RDTE RPMA program in the FY91 Budget Estimate Submission (to fund all known Class I environmental compliance projects in FY 1991-94 and offset a portion of the Annual Recurring Requirement shortfall). The Field Long Range Research, Development and Acquisition Plan (FLRRDAP) increased the funds for environmental issues and raised the level of funding to meet the Annual Recurring Requirements (ARR) to prevent further erosion of facilities.

FY1989 RDTE OBLIGATION PLAN. The FY89 RDTE Obligation Plan was submitted to HQDA based on 98% of AMC's total program. Although AMC did not meet its intended goal of 98%, AMC did exceed the OSD goal of 94% by obligating 95% of the FY89 program.

Program Planning and Integration Division

The most important issue handled by this division was the Long Range Research Development and Acquisition Plan/Mission Area Materiel Plan (LRRDAP/MAMP) process.

FY89 Long Range Research, Development and Acquisition Plan/Mission Area Material Plan (LRRDAP/MAMP) Process. The Long Range Research Development and Acquisition Plan/Mission Area Materiel Plan (LRRDAP/MAMP) process had been established in 1985 jointly by HQ AMC, the materiel developer, and HQ, Training and Doctrine Command, the combat developer. In 1987 the Information Systems Command (ISC) became the third Army command to join the process, lending further credibility to the Field LRRDAP. The Assistant Secretary of the Army for Research, Development, and Acquisition (ASARDA) and the Army Program Executive Officers (PEOs) also participated.

The MAMP process converted the user's materiel deficiencies, as defined in the TRADOC Concept-Based Requirements System (CBRS), into Research, Development and Acquisition (RDA) plans and programs. All AMC Major Subordinate Command Commanders also served as Mission Area Managers (MAM) and were responsible for formulating strategies and defining the appropriations required to develop materiel solutions to the deficiencies in their mission area. The MAMs presented their plans to a Mission Area Integration Team (MAIT) that developed an affordable Field LRRDAP.

The proposed Field LRRDAP was reviewed by the participating MACOM commanders and when approved was sent to HQDA to be used as the input document for the Program Objective Memorandum (POM) process. The HQDA FY92-06 LRRDAP included the requirement for direct participation by Commanders of all MACOMs, and Joint Command Army Component, and by PEOs. To ensure early consideration of new RDA requirements, MACOMs, Commanders-in-Chief, and PEOs submitted their requirements to the field proponents early in the LRRDAP build process. The results of the 1989 LRRDAP/MAMP review (the Field LRRDAP) were sent to HQDA on 5 October 1989. The Field LRRDAP was to be used to initiate the HQDA 92-97 POM exercise.

Other accomplishments during FY89 on the LRRDAP process included the preparation and publication of guidance documents in the form of a revised LRRDAP/MAMP Memorandum of Instruction (MOI). A revised milestone chart was also published and distributed. Major milestone changes included provision of FY92-97 DOD fiscal guidance to the services in February 1989, approval and distribution by TRADOC in February 1989 of the Final Battlefield Development Plan (BDP), the distribution to MACOMs in May 1989 of the HQDA Draft FY92-06 LRRDAP, the provision of defense guidance to HQDA to support the POM build in July and November 1989, the conduct of MAIT reviews in August and September 1989, and submission of the Field LRRDAP to HQDA on 5 October 1989.

Mission Area Changes. TECOM became the Test and Evaluation (T&E) Mission area manager. The Special Operations Forces (SOF) mission area was transferred to DOD as a separate operating agency and was no longer tracked by the Army.

Materiel For Winning. The publication "Materiel for Winning" had been introduced in 1986 to describe the research, development, and acquisition (RDA) process and its results. The 1988 version was published in September 1988 and 10,000 copies were distributed to both industry and government. The document contained generalized unclassified data which was used as guidance by industry to develop their R&D programs and as a training aid and planning guide for government. The results of the FY89 Field

LRRDAP and HQDA Program Objective Memorandum will be used to publish the CY90 Materiel for Winning in FY90.

Automation. Bernoulli Box IIs were installed on all division PC's to be used for processing classified data. The Bernoullis had two 20 megabyte removable storage disks. Bernoulli boxes were also installed at all Mission Area Manager sites (both AMC and TRADOC), as well as HQ TRADOC, HQ ISC, Combined Arms Center, DA staff and RDAISA. Secure voice and data phones (STUIII) were installed at these sites also. This work was completed with the support of the Acquisition Information Management (AIM) office. All data needed for building the field LRRDAP was sent using the PCs, Bernoulli boxes, and the STUIII capability. Files of 1.8 megabytes (400K bytes compressed) were transmitted to and from AMC MSC's, TRADOC, ISC and DA via these means. FY89 was the first year that the data for the field LRRDAP/MAMP process was transmitted via telecommunications means entirely.

Procurement Appropriation Management Division. The most significant issues in this division included the Procurement Appropriation (PA) Army Summer Budget Review, the Published Army Procurement Appropriation Preparation/Review of Procurement Exhibits instruction books, the FY89 Obligation Plan, Procurement Appropriation, and the FY87 Expiring Year Procurement Appropriation.

Summer Budget Review. The Procurement Appropriation, Army Summer Budget Review of the FY91 Amended Budget was a joint effort of ASA(FM) (Assistant Secretary of the Army [Financial Management]), ASARDA and HQ AMC, to review all Procurement Appropriations for defensibility, executability and pricing. DCSOPS also participated in the review. In preparation for the review, in-house training sessions were conducted for the DEA and MSC staffs on budget review techniques and budget scrub of P-Forms. Ten separate on-site reviews were held during the period May-June 1989.

Preparation of Procurement Exhibit Instruction Books. These instruction books on preparation of procurement budget exhibits were published and distributed throughout AMC.

The FY89 Obligation Plan. AMC was required to submit to the Department of the Army an annual obligation plan for the Procurement Appropriations. This year's plan, submitted in January 1989, reflected plans to obligate \$15.3B of a \$17.9B program for Aircraft, Missiles, Weapons and Tracked Combat Vehicles and Other Procurement Army. Actual obligations were \$14.4B, or 94% of what was planned. The \$.9B slippage was due to various contractual and technical problems. These items were forecast for award in FY90.

FY87 Expiring Year Procurement Appropriation. AMC had the best performance in its history for the obligation of expiring year funds in the Procurement Appropriations. AMC obligated \$14.7B or 99.7% of a \$14.7B program. Of the \$41.8M unobligated, \$39.5M was held for contingent liabilities and \$2.3M was excess.

Support Systems Division

The most significant issues handled by this division included the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), Truck Prototype Contracts, Pouch Bread for Meal, Ready-to-Eat (MRE), Simulated Area Weapons Effect-Radio Frequency (SAWE-RF), Multiple Integrated Laser Engagement System (MILES), and Nuclear Biological Chemical Reconnaissance System.

High Mobility Multi-Purpose Wheeled Vehicle (HMMWV). A follow-on contract for additional HMMWV's was awarded to AM General, the original supplier. The over \$1B contract would provide over 30,000 additional HMMWV's for the Army's light truck fleet.

Truck Prototype Contracts. A prototype contract was awarded for the new Family of Medium Tactical Vehicles (FMTV). The FMTV would be the next generation vehicle for the Army's medium truck fleet and would replace the current overaged and maintenance intensive fleet. A prototype contract was also awarded for the Palletized Loading System (PLS). The PLS would streamline the ammunition distribution system through the use of "palletized" ammunition transported on PLS flatracks.

Pouch Bread for Meal, Ready-to-Eat (MRE). Natick Research, Development and Engineering Center (NRDEC) developed, in association with the commercial food industry, a shelf stable, flexible packaged, individual serving of white bread. This pouched bread would be included in some of the menus of MRE XI as a replacement for the crackers. In the interim, the pouched bread would be provided in bulk cartons to allow a one for one issue with each case of MREs.

Simulated Area Weapons Effect - Radio Frequency (Global Positioning System) (SAWE-RF [GPS]). In July 1989, an RDT&E contract was signed at PM TRADE for the development of the SAWE-RF (GPS) system. This system would have the capability to accurately simulate the effects of indirect fire in real time. SAWE-RF (GPS) would incorporate the GPS (Global Positioning System) technology to simulate indirect fire, scatterable mines and non-persistent chemical agents and provide real-time casualty assessment for more realistic training. The contract had an FY91 production option for three systems priced at \$38.0M. SAWE-RF systems would be fielded first at the Army Combat Training Centers starting in FY92 and may later be fielded Army-wide. This simulation would correct a training deficiency that was first identified in 1976 and confirmed in a May 1988 report based on a National Training Center study started in 1986.

Award of Multiple Integrated Laser Engagement System (MILES) Contract. In August 1989, AMCCOM awarded a contract to Simulaser, City of Industry, California, to buy twelve different varieties of MILES equipment. The basic contract was priced at \$36.0M with two options priced at \$6.6M (FY89/FY90) and \$8M (FY90). Simulaser was selected over the present contractor, Loral. At \$6.0M the basic contract price was significantly less than estimated, allowing for the award of the option with FY89 funds.

Nuclear, Biological, Chemical Reconnaissance System (NBCRS). This system consists of NBC sampling, detection, and warning equipment integrated into a high speed, high mobility, armored carrier capable of performing NBC reconnaissance on primary, secondary, or cross country routes. The FY89 program, following the Congressionally directed NDI approach, was to complete a competitive shootoff between at least two responses to the September 1988 RFP. The shootoff winner would be awarded contracts for: 48 "as competed" initial production systems for urgent USAREUR fielding; a systems improvement phase; and 5 years of production options for a full-rate production, type-classified standard system. General Dynamics/Thyssen-Henschel and TRW/General Motors of Canada were selected to participate in the shootoff tests (early user test and evaluation) and were both awarded a \$500K contract to support these tests.

The testing was a coordinated effort between PM NBCDS, U.S. Army Armor Engineer Board (ARENBO), U.S. Army Test and Evaluation Command (TECOM), U.S. Army Materiel Systems Analysis Activity (AMSAA); U.S. Army Operational Test and Evaluation Agency (OTEA), TACOM, and CRDEC. This testing was initiated in May 1989 and completed on 14 July 1989. The draft ARENBO test report was provided in August 1989. Program documentation for type-classification limited production (urgent) (TC-LP(U)) of this NDI was not available as in developmental programs, so major emphasis was placed on its preparation. Among major program documents prepared in FY89 were the required operational capability (ROC) update, ILS plans, health and safety assessments and reports, acquisition plans and various plans required to achieve limited production type classification.

To reduce contract administrative problems, a decision was made to award separate contracts for the interim system and the production system improvement phase. Four model contracts (one for each offeror

for each phase) were prepared during FY89 to reduce the final negotiation process. The program schedule was maintained through FY89, and contracting efforts in FY89 were made to expedite FY90 negotiations.

Office of the Executive Director for Chemical and Nuclear Matters

Manpower and Personnel

The Office of the Executive Director for Chemical and Nuclear Matters had 18 authorized spaces, and had a requirement for 25 spaces. LTG Fred Hissong, Jr., AMC's Deputy Commanding General for Materiel Readiness, was also dual-hatted as the Executive Director for Chemical and Nuclear Matters and was not included in that total. The Deputy Executive Director was COL Victor J. Fenwick, Jr.²³

Significant Issues

The most significant issues faced by the office in FY89 included the Chemical Stockpile Disposal Program (CSDP), the Chemical Accident Emergency Response Program, the Binary Chemical Stockpile Modernization Program, the Chemical Treaty, Detection and Alarms, Physical Protection, and the AMC Nuclear Underground Storage Facility. These and a variety of other issues are discussed below.

Chemical Stockpile Disposal Program (CSDP)

A site-specific Environmental Impact Statement for the Tooele Army Depot Chemical Disposal Facility was published in July 1989. Construction of this facility was placed under contract in September 1989 to EG&G, Defense Materials Group, Incorporated, Falls Church, Virginia. The \$212M contract included a 30-month construction phase followed by a 63 month prove out and operation phase. The target date for completion was 30 April 1997.

The Chemical Demilitarization Training Facility (CDTF), under construction in the Edgewood Area of Aberdeen Proving Ground, Maryland, was to provide initial training to all chemical disposal plant personnel. The primary objective of the facility was to provide uniform and sustained training to minimize the time required for actual in-plant and systemization training. The CDTF would utilize only simulant agent and munitions in its training mission.

The \$8.6M CDTF contract was awarded in June 1989 to General Physics, Columbia, Maryland. An environmental assessment was completed with a Finding of No Significant Impact (FNSI) being obtained in the first half of the fiscal year. Work is in progress on the development of the training materials and on the process control simulator. Training of demilitarization workers was scheduled to start in FY91.

Chemical Accident Emergency Response Program

The chemical accident emergency response program was a \$100M program that complemented the Chemical Stockpile Disposal Program. The accident emergency response program was managed jointly by the Office of the Assistant Secretary of the Army (Installations and Logistics) (OASA (I&L)) and the Federal Emergency Management Agency (FEMA). The Deputy Executive Director for Chemical and

²³Unless otherwise noted, all the information in this section came from the Executive Director for Chemical and Nuclear Matters AHR submission for FY89. Several classified topics not covered in this AHR can be found in the submission, including data about Nuclear Munitions and the retrograde of chemical munitions from Germany.

Nuclear Matters (DEDCNM) was actively involved as the AMC representative to the joint Army/FEMA National Emergency Response Steering Committee.

In November 1988, the DEDCNM established an AMC Emergency Response Planning Board (ERPB). The ERPB developed a requirement for \$18.1M for emergency response equipment upgrades, to include Emergency Operations Center (EOC) automation systems, for the eight AMC CONUS chemical storage sites. Approximately \$4M of these requirements were approved by the Office of Chemical Demilitarization, OASA (I&L) for execution in FY90.

The OEDCNM's Chemical Operations Division participated in committees and work groups to develop AMC requirements and provide overall planning guidance for this program.

Binary Chemical Stockpile Modernization Program

Significant progress was made in two of the three binary chemical weapons development programs, but not without some problems and delays. The principal supplier of metal parts for the M687 155MM binary projectile, The Marquardt Company (TMC), continued to have manufacturing and quality problems on the M20 and M21 canisters early in the year, but by the end of the year, production quantities met or exceeded the contract schedule. Dissemination tests were begun at Dugway Proving Grounds (DPG) with Initial Production Tests (IPT) scheduled to begin in the first quarter of FY90. It was anticipated that the program would get back on its original schedule during FY90.

The Multiple Launch Rocket System-Binary Chemical Warhead (MLRS-BCW) continued full-scale development with successful dissemination tests at DPG and Eglin AFB, and a series of flight performance test at White Sands Missile Range (WSMR). A construction contract was awarded in May 1989 to CWR Construction Company to build the fill/close facility at Pine Bluff Arsenal. The equipment contract was awarded to Ralph M. Parsons Co. in September 1989 to allow phase I construction to begin. Parsons was to complete all preproduction and full-scale production designs by December 1989, and complete Phase I Construction by May 1991.

The Bigeye Bomb was a joint service program with the Army as developer/producer, and the Navy and Air Force as users. During FY89, laboratory and chamber tests were conducted to refine various technical and performance aspects of the Bigeye. The major effort was in the construction of production facilities at Pine Bluff Arsenal. The fill/close facility Major Construction Army (MCA) project was 70 percent complete, with construction work 38 percent complete. The FY89 Appropriations Bill restricted the Navy from entering Low-Rate Initial Production. This bill granted authority to procure configured weapons for conduct of Operational Test IIC using previous year's funding.

Design of the QL production facility was 72 percent complete as of 30 September 1989. Construction was approximately 10% complete, with site work being completed along with a number of foundation and building support items.

Chemical Treaty

The Chemical Research Development and Engineering Center (CRDEC) at Edgewood Arsenal and the EDCNM provided technical support to the U.S. Arms Control and Disarmament Agency (ACDA) for the U.S. National Trial Inspection conducted in February 1989 at ARZO Chemical Inc, Gallipolis Ferry, West Virginia. The treaty office provided sample collection and analysis, review of equipment and technical data, as well as an audit of production records. The office also conducted the inspection of the draft plans and procedures and provided inspection personnel.

CRDEC also prepared and submitted to DA at the end of FY89 a detailed Execution Plan for a RDT&E Program. This plan was responsive to the proposed DOD FY90 program to Congress on Chemical Weapons Treaty Verification (CWTV) Technology. This plan addressed the issue of providing technical support to the ongoing CW treaty process and represented a more detailed level of planning than had been previously achieved. This plan was consistent with the "CW Technologies Review" briefing.

Detection and Alarms

The XM93 Nuclear, Biological and Chemical Reconnaissance System (NBCRS) entered into a competitive shoot-off between two groups of contractors, General Dynamics/Thyssen-Henschel and TRW/General Motors. The shoot-off was completed in July 1989, and a draft report completed in August 1989. Selection of the successful contractors would be made early in the second quarter of FY90.

The Chemical Agent Monitor (CAM) was fielded to the Army Technical Escort Unit at Aberdeen Proving Ground in September 1989. The first unit equipped in USAREUR also occurred in September 1989. A product improvement program to reduce the logistics and maintenance burden of the CAM was formulated and would be submitted in first quarter of FY90.

AMC Underground Munitions Storage Facility

On 16 May 1989 the Vice Chief of Staff of the Army (VCSA) directed AMC to take appropriate action to develop a program to construct and operate an underground storage facility for munitions, with beneficial occupancy in September 1995. In June 1989 an Underground Storage Management Group (UGSMG), chaired jointly by AMC and Corps of Engineers, was established. The UGSMG developed a program complete with milestones to accomplish the VCSA tasking. In October 1989 the DCGMR was briefed on the status of the program. The DCGMR approved the operational concept and the milestones for the program and forwarded them to the HQDA Deputy Chief of Staff for Operations (DCSOPS). Preliminary estimates indicated that the facility would cost \$154M.

Chemical Stockpile Disposal Program (CSDP) Environmental Documentation

Preparation of site-specific Environmental Impact Statements (EIS's) tiered to the Final Programmatic Environmental Impact Statement (FPEIS) continued. The site-specific analyses were being performed in two phases. Phase I consisted of the collection of detailed site-specific data and the analysis of that data to determine the validity of the FPEIS findings. The Phase I reports would support or reject the conclusions reached in the FPEIS. If no significant differences in the data bases were revealed, the site-specific EIS would be developed as Phase II of the process and would address the impacts of implementing the programmatic Record of Decision.

Argonne National Laboratory (ANL), operated by the University of Chicago, was selected to perform an independent analysis of the Phase I reports before the Army embarked on the preparation of site-specific EIS's. Oak Ridge National Laboratory (ORNL) was to prepare the documentation for both phases of the program. The Department of Health and Human Services (DDHHS), The U.S. Environmental Protection Agency (EPA), and the Federal Emergency Management Agency (FEMA) were participating as cooperating agencies in the preparation of both phases of the program.

Over the last year, the Tooele Army Depot (TEAD) Phase I analysis was completed. In its independent analysis, ANL agreed with the Army that no new or unique site-specific information was uncovered that would change or contradict the conclusions reached in the FPEIS for TEAD. The final site-specific EIS for TEAD was published in July 1989 and a ROD published in August 1989.

Site-specific analyses for Anniston Army Depot (ANAD), Umatilla Depot Activity (UMDA), and Pine Bluff Arsenal (PBA) were underway. Public scoping meetings were held in December 1988, February 1989, and April 1989 at each site, respectively, with no significant issues raised by the public.

Chemical Stockpile Disposal Program Resource Conservation and Recovery Act and Clean Air Act Permits

During FY89, emphasis was directed at obtaining Resource Conservation and Recovery Act (RCRA) permits for the Tooele Army Depot Chemical Disposal Facility (TOCDF) to support construction of that facility in late FY89. A draft RCRA permit was made available for public comment in March 1989. No significant comments were received and the permit was issued by Utah in June 1989. The final Clean Air Act (CAA) permit, also required before construction could begin, was issued in August 1989.

Chemical Stockpile Disposal Program (CSDP) Design Projects

Design efforts for the Umatilla and Anniston disposal plants were initiated in the last quarter of FY89 in order to generate information and documentation for RCRA permit applications scheduled to be prepared in FY90. Throughout the year and continuing to the present time, all design efforts, including the TOCDF and the Central Demilitarization Training Facility (CDTF), incorporated lessons learned from the Johnston Atoll Chemical Agent Disposal System (JACADS) program, changes resulting from equipment acquisition activities, and revisions resulting from environmental permitting actions.

A detailed engineering analysis of more cost effective approaches to the Pine Bluff Arsenal disposal facility was completed during the year, which resulted in an Army decision to design a new facility rather than convert the existing BZ (Benzene) plant. Several of the BZ plant support complexes (medical support facility, personnel support complex, etc.) would be used by the new disposal facility.

Military Construction, Army (MCA) projects which would support the disposal efforts at the various storage sites were initiated. These projects, which must be completed by FY91, included road and utility upgrades and supplemental facilities such as laundry and change houses, and stockpile maintenance or reconfiguration buildings.

CSDP Program Reviews

The chemical demilitarization program received increased attention and review during the past year from several Government activities. A three member team from the House Appropriation Committee, Surveys and Investigations, conducted a broad review of the demilitarization program between March and October 1989. Their interests centered on program evolution, technology development, the impacts of legislation on the program, makeup and locations of the chemical stockpile, maturity of the JACADS disassembly/incineration process versus cryofracture/incineration technology, and problems associated with JACADS start-up. Information leading to the team's conclusions was gathered from existing documentation, visits to contractor and Government performers, interviews with current and past Program Manager employees, and new studies completed at the team's request. A final report was published in October 1989.

The General Accounting Office (GAO) headquarters was coordinating two reviews of the chemical demilitarization program involving personnel from their Far East Regional Office, Honolulu, Hawaii, and the Philadelphia Regional Office, Philadelphia, Pennsylvania. The Far East Region was concentrating on the status of the JACADS project, including causes for program delays and cost growth. The Philadelphia Region was conducting a broader review of the total CSDP. This review included adequacy of storage procedures, emergency response requirements, status of the disposal program including schedules and environmental permits, and follow-on uses for the disposal facilities. Final reports were expected to be published in the Spring of 1990.

The Army Audit Agency's (AAA) Washington, DC Headquarters initiated a review of the Army's Chemical Program in November 1988, of which chemical demilitarization was a significant part. Chemical demilitarization interests centered primarily on the installations, depot support requirements for the demilitarization effort, and the use of the On-Site-Container (OSC) for transporting chemical munitions from storage to the disposal plants. A final report would be issued in early 1990.

CSDP Program Schedule Revisions

The CSDP Implementation Plan submitted to Congress in March 1988 specified a program completion date for destruction of the unitary stockpile by April 1997. That plan was predicated on the Johnston Island Operational Verification Tests being completed by August 1989. Since that time, delays in the completion of the tests have mandated a change in several of the project's intermediate milestones. However, the overall completion date had been maintained as April 1997, but the PM was in FY89 reevaluating the April 1997 completion date. The primary causes of the potential changes were the RCRA requirements, as reflected in the RCRA permit issued by the state of Utah; lessons learned from the JACADS program; and other administrative and technical requirements. A revised schedule reflecting these considerations would be available in early 1990.

Pine Bluff Arsenal (PBA) BZ Disposal Facility

Disposal of agent BZ at PBA began in May 1988. Prior to the start of the operations, the plant was subjected to an exhaustive systemization program which closely reviewed and tested each process system involved in the destruction of agent BZ. This ranged from demonstrating the precision and accuracy of the laboratory analytical methods used to monitor plant effluent streams, to certification of plant compliance with all applicable federal, state, and local regulatory documents and permits.

The entire BZ inventory, including bulk and munition stocks, has been destroyed. Current operations centered around the destruction of solid and liquid wastes resulting from the disposal campaigns and prior production/test operations. BZ disposal operations were scheduled to be completed during the second quarter FY90.

Chemical Agent Munitions Disposal System (CAMDS)

Testing and verification activities in support of the JACADS and CSDP programs continued throughout the year. A major aspect of the baseline technology was verified in September 1989 when the Liquid Incinerator successfully completed an environmental test burn with nerve agent VX. The test burn was monitored and observed by representatives from the State of Utah's Bureau of Solid and Hazardous Waste (UBSHW). Over 40,000 pounds of chemical agent VX were incinerated during the trial burns. The RCRA compliance test report would be filed with the UBSHW in November 1989, with the final environmental test report distributed in March 1990.

Reliability tests involving the Multipurpose Demilitarization Machine (MDM), the Projectile Mortar Disassembly Machine (PMD), and the Bulk Drain Station (BDS) were conducted using simulant-filled projectiles. The reliability tests verified the design throughput rates and equipment availabilities of the disassembly machines. During these reliability tests over 16,800 munitions were processed. In addition to the reliability tests, an MDM maintainability test was conducted which demonstrated the ability of personnel to repair the MDM efficiently while wearing the Demilitarization Protective Ensemble (DPE).

Tooele Army Depot Chemical Disposal Facility (TOCDF)

The technical data package (TDP) for the TOCDF procurement was completed early in FY89 with a Request for Proposal (RFP) issued in December 1988. The resulting contract for construction, equipment installation, test operation, and closure of the facility was awarded to EG&G, Massachusetts, in September 1989. In FY89 the facility was under construction.

Chemical Accident Emergency Response Program

Originally a component of the chemical demilitarization program, the chemical accident emergency response program developed into a separate program with significant impact for AMC and the eight CONUS chemical storage sites. The Chemical Operations Division of the Executive Director for Chemical and Nuclear Matters was the focal point within AMC for coordinating the emergency response program.

A Memorandum of Understanding between the Department of the Army and the FEMA signed in August 1988 established a joint cooperative program between the two agencies and vested responsibility for emergency response planning in the Office of the Assistant Secretary of the Army for Installations and Logistics. This action also set the tone and pace of AMC involvement in the emergency response planning effort at the storage sites for FY89.

In October 1988, the National Steering Committee for Emergency Response was established. This committee, jointly chaired by DA and FEMA, met quarterly to discuss the emergency response program for both the current AMC chemical storage mission and the upcoming demilitarization program and to provide policy and guidance. The Deputy Executive Director for Chemical and Nuclear Matters was the AMC member of the committee.

The Executive Directorship's Chemical Operations Division actively participated in the National Steering Committee's Action Officer Work Group, later renamed the Planning Subcommittee. Products that were developed by this group in FY89 were the Chemical Stockpile Disposal Program: Draft Management Plan for Emergency Response Activities and the Emergency Response Program Guidance for the Chemical Stockpile Disposal Program. These two documents would become the cornerstones for development of comprehensive coordinated emergency response plans between the eight chemical storage sites and their surrounding communities and respective states.

To coordinate efforts within the AMC community, the Deputy Executive Director for Chemical and Nuclear Matters established an AMC Emergency Response Planning Board with membership from this HQs, the Eight Chemical Storage Sites and their respective MSCs. Major efforts of this board in FY89 were the development of on-site emergency response equipment upgrade requirements totaling approximately \$18.1M, divided between FY89 and FY90 requirements of \$6.1M and \$12M, respectively. These requirements were submitted to the OASA (I&L) for approval. Approximately \$4M from the FY89 list was approved in September 1989 for execution in FY90. The remaining \$2M of the FY89 requirements was associated with EOC automation requirements; the money was three-year procurement dollars and the remaining requirements were subject to approval pending completion of emergency response automation studies.

In July 1989, the National Steering Committee established a computer applications subcommittee to address the emergency response automation issue. The Chemical Operations Division was an active member of that subcommittee. The preferred AMC system was an in-house system developed at CRDEC called the Warning Against Toxic Chemical Hazards (WATCH) System. AMC began negotiations with FEMA to integrate the WATCH System with a FEMA System, the Integrated Emergency Management Information System (IEMIS), to provide for the total emergency planning and response needs of the storage sites and

the surrounding communities. This integrated system was to be formally proposed to the Computer Applications Subcommittee in the first quarter of FY90.

Chemical Surety Program

In October 1989, responsibility for the chemical surety inspection program transferred from the Surety Field Activity to the AMC IG Office. In March 1989, a new AR 50-6-1, Chemical Agent Security Program, with more stringent security requirements for the storage sites went into effect. The result of these two actions was an increasing trend of surety inspection failures in FY89, particularly in the area of security, at the chemical surety material handling locations in AMC. The Chemical Operations Office spent a considerable effort analyzing this trend and attempting to develop appropriate corrective action to reverse it. This proved to be frustrating endeavor, as no systemic problems were noted, thus no easy corrections were available.

In February 1989, as a positive action to reverse the trend and bolster the chemical surety programs in AMC, the Executive Director for Chemical and Nuclear Matters (EDCNM) directed a new mission for the Surety Field Activity. A Surety Management Review program was established with the Surety Field Activity conducting the reviews as a type of assistance visit to the chemical surety material custodial activities. They were further tasked to follow up on corrective actions taken by the installations on deficiencies noted during the reviews. The EDCNM also directed that the MSC Commanders get more involved in the surety program in their command and that installation chemical surety officers be relieved of all additional duties that detracted from their primary role of command surety manager.

Service Response Force Exercise-1989 (SRFX-89)

SRFX-89, which was conducted at PBA in Arkansas during 11-15 June 1989, was the largest and most valuable experience to date in a continuing program of Army nuclear and chemical accident response exercises. The participation of more than 1,000 players provided assurance that the Army, in conjunction with local officials and state and federal agencies, could respond to a toxic chemical accident at an Army facility and manage the crisis responsibly. Plans, concepts, equipment, facilities and people were challenged to the fullest. The exercise provided valuable lessons to be incorporated in current plans and future operations. The EDCNM office worked closely with the AMC Surety Field Activity in the conduct of this exercise and provided some personnel to the controller staff at PBA. The EDCNM was also the focal point for SRFX-89 within AMC headquarters with respect to coordinating and executing exercise play in this Headquarters. Initial efforts were begun to plan for SRFX-90, a nuclear accident response exercise to be conducted at Seneca Army Depot.

Chemical Biological Mass Spectrometer (CBMS)

The CBMS would be a continuous, automatic air-sampling device for detection of all types of CB agent materials, whether vapors, aerosols, or liquid droplets. Development proceeded into Phase II in the first quarter of FY89. Standard Operating Procedures were obtained for in-house testing of the system using a wind tunnel and an aerosol chamber. A sealed aerosol generator with plenum which can be fitted inside a chemical hood was obtained.

An FY88 contract award was extended to study Curie Point-short column CG-Ion Trap Mass Spectrometer. An Organizational and Operational Plan was drafted for the CB Mass Spectrometer system. The CB Mass Spectrometer Phase I Demonstration system and a new Ion system were returned to the contractor for updates. A new Ion Trap mass spectrometer was installed in the lab, initiating in-house MS capability. The infrared radiative pyrolyzer, developed at CRDEC, was integrated into the CB MS. The Phase II breadboard test matrix was determined and forwarded to the contractor. An unclassified mass spectral database of potential threat chemicals was completed and forwarded to the contractor. Ion Trap

MS technology and methodology was applied to exploration of lipid and protein data for generation of alarm algorithm decision information. This demonstrated that all major biopolymer components of bacteria can be detected in a six minute experiment. Obtained first laboratory data to show that extraction of monoglyceride lipid information appears to be feasible with a quartz tube radiative pyrolysis GC/MS.

Stand-off Detection

The Laser Stand-off Detector was to be a lightweight, vehicle-mountable, contamination monitoring system which could detect and quantify all types of chemical agent contamination in a stand-off mode.

During FY89, major advancements were made in three separate areas of Stand-off Detection. In the joint U.S./French Laser Chemical Stand-off Detector, technical and performance specifications were developed for a Frequency Agile Light Weight CO2 Laser. These specifications would be used to purchase this pace setting laser in FY90. The in-house development team also designed and ordered components for a mobile lidar data acquisition system. The system would acquire, average and store range resolved Laser Induced Detection and Ranging (LIDAR) returns at a rate of 50 to 75 hertz (Hz). Range resolved lidar returns have been recorded which confirm that 1km range resolved measurements are possible with the present system with less than 100 mJ of laser energy. Also, an in-house laser measurements program was initiated from AMC's fixed site lidar facility. This program was to concentrate on measurement of atmospheric effects.

Bio-Chemical Detector

The Bio-Chemical Detector was to be a hand-carried, continuous, automatic, air-sampling device capable of detecting specific CB agents and of indicating an all clear conditions. A visual and audible alarm, display of agent class, and concentration level would be available locally and for transmission to a battlefield information network.

The Light-Addressable Potentiometric Sensor (LAPS) was chosen as the biosensor for the Bio-Chemical Detector. The virtual impactor for Bio-Chemical Detector was fabricated, and initial testing begun. The Breadboard Design Review for the Bio-Chemical Detector, with attendance by representatives from Canada and the United Kingdom, was held on June 1989 and breadboard fabrication continued. Bio-Chemical Detector testing was being planned in conjunction with TECOM, DPG, and the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD). A preplanned product improvement for the Bio-Chemical Detector would add the capability for generic detection of unknown chemical and toxin agents to the BC Detector.

Automatic Chemical Agent Alarm (ACADA), XM22

The ACADA was an advanced point-sampling, chemical agent alarm which would replace the M8A1 Alarm. The ACADA provided blister agent detection, improved nerve agent sensitivity, agent identification, improved interference rejection, extensive built-in-test, a data communications interface, and the ability to be programmed for new agents.

The acquisition strategy was revised in March 1989, to provide for a strategy-specified award of a new full-scale development contract to the advanced development contractor, followed by a competitive initial production contract with a pre-production evaluation. A contract modification for development of a Collective Protection Equipment (CPE) adapter to solve the problem of operating the ACADA in a CPE environment was awarded in December 1988. A successful Technical Review of the redesigned ACADA was held on 16 February 1989 at the Environmental Technologies Group (ETG) plant. The review covered brass-board test results since the Critical Design Review in May 1988.

Development Testing (DT) was successfully completed in August 1989 with no significant problems. Electromagnetic Interference (EMI) testing was completed in August 1989 at the U.S. Army Combat Systems Test Activity (CSTA). TECOM reviewed the DT results and approved an Independent Assessment Report (IAR) recommending transition to full-scale development. The milestone II In-Process Review was scheduled for 7 November 1989. The Test Evaluation Master Plan (TEMP) was approved on 12 October 1989 with Draft Critical Operational Issues and Criteria (COIC). All essential ACDA Program Management Documents required in support of the MS II IPR decision were approved by September 1989. Preparation of the full-scale development contract package was initiated in March 1989, and contract award was planned for March 1990.

Chemical Agent Detector Network (CADNET)

CADNET was a radio frequency based system designed to provide automated CB detector alarms on a near real time basis to the unit where the alarm originated, adjacent units and higher headquarters. A program status review for the CADNET was conducted for the Army community, and the repair versus discard analysis was revised during the second quarter of FY89. The CADNET program successfully obtained Level II system matrix management support from Headquarters, U.S. Army Armament and Munitions Chemical Command (HQ AMCCOM) in the third quarter of FY89. The Reliability and Maintainability (RAM) Rationale was submitted to the Army Chemical School for approval in fourth quarter of FY89.

The CADNET program schedule was delayed by one year due to developmental problems with the XM24 case and circuit chips in fourth quarter of FY89. Engineering Design Test (EDT) was delayed until the fourth quarter of FY90. Approval of Required Operational Capability (ROC) and the TEMP was in process.

Multi-Purpose Integrated Chemical Agent Alarm (MICAD)

The MICAD would interface with CPE to allow activation of CPE in systems when NBC contaminants were detected or when an alarm was received via the C2 radio. For battlefield ground units, the MICAD telemetry link would allow the transmission of NBC alarms and information from remote chemical detectors to the display/control for processing into the NBC-1 report.

The Acquisition Strategy for the MICAD was approved in August 1989. The Acquisition Plan was staffed for approval, and the Test and Evaluation Master Plan and Integrated Logistic Support Plan were drafted during FY89. An advanced development (6.3b) contract was written in FY89 and was scheduled for award in the second quarter of FY90.

Remote Sensing Chemical Agent Alarm (RSCAAL, XM21)

The XM21 was an automatic, scanning, passive infrared sensor which detected nerve and blister agent vapor clouds based on changes in the infrared caused by the agent. Full-scale engineering development of the XM21 Alarm continued in FY89. Technical Test II (TT-II), started in FY88, continued during FY89. Technical testing was completed at the Cold Regions Test Center at Fort Greeley, Alaska, the Tropic Test Center in the Republic of Panama, and the Electronic Proving Ground at Fort Huachuca, Arizona. Decontamination testing at Dugway Proving Ground, Utah, was completed. Agent Chamber and simulant field tests were started and were to be completed during FY90. Field tests of the XM21 in a desert environment were conducted at Yuma Proving Ground (YPG), Arizona. The XM21 experienced a higher than acceptable rate of false alarms during this testing. Analysis of this problem resulted in equipment modifications which were to be implemented and demonstrated in early FY90. This problem resulted in a slip of the planned User Test from fourth quarter of FY89 to the second quarter of FY90 and would also necessitate a limited retest at YPG during FY90.

Nuclear Survivability testing was conducted at White Sands Missile Range and Sandia National Laboratories, New Mexico. One circuit card assembly failed a subtest and would be retested during FY90 after hardware modification. After developing the air-drop packaging configuration, a static drop of the XM21, simulating an air-drop, was conducted at Natick RDT&E Center, Massachusetts. The actual air-drop would be conducted at YPG during FY90.

In conjunction with the contractor, Brunswick, Inc., Support Software Acceptance Tests I and II were conducted. Development and testing of the Acceptance Inspection Equipment for the XM21 was restarted, and was to be completed during FY90.

Fixed Site Chemical Detection and Warning System (FSCDWS)

In FY89, funding was deleted for the Army's Fixed Site Program. However, technical assistance to the Air Force's Fixed Site Program was provided by CRDEC. Personnel from Wright-Patterson Air Force Base were trained in the use of the Fixed Site Network Simulation (NETSIM) model.

Nuclear-Biological-Chemical Reconnaissance System (NBCRS), XM93

The XM93 Nuclear, Biological, Chemical Reconnaissance System (NBCRS) was a system of NBC sampling, detection, and warning equipment integrated into a high speed, high mobility, armored carrier capable of performing NBC reconnaissance on primary, secondary or cross country routes. The FY89 program, following the Congressionally directed non-developmental item (NDI) acquisition approach, was to complete a competitive shoot-off between at least two offerors from the September 1988 Request For Proposal (RFP).

The shoot-off winner would be awarded contracts for 48 "as competed" initial production systems for urgent USAREUR fielding; a systems improvement phase; and 5 years of production options for a full-rate production, Type-Classified (TC) standard system. General Dynamics/Thyssen-Henschel and TRW/General Motors of Canada were selected to participate in the shoot-off tests (early user test and evaluation) and were both awarded a \$500K contract to support these tests. The testing was a coordinated effort between PM NBCDS, U.S. Army Armor Engineer Board (ARENBD), TECOM, U.S. Army Materiel Systems Analysis Activity (AMSAA); U.S. Army Operational Test and Evaluation Agency (OTEA), TACOM, and CRDEC. This testing was initiated in May 1989 and completed on 14 July 1989.

The draft ARENBD test report was provided in August 1989. Program documentation for type classified as limited production (urgent) (TC-LP(U)) of this NDI was not available as in developmental programs, so major emphasis was placed on its preparation. Among major program documents prepared in FY89 were the ROC update, ILS plans, health and safety assessments and reports, acquisition plans and various plans required to achieve limited procurement-urgent type classification.

M9 Paper

M9 Paper detects liquid nerve and mustard agent droplets. It has an adhesive backing which allows it to be affixed to any surface. The red dye in the M9 paper was purchased sole source from BASF Corporation, located in West Germany. During FY89, a U.S. source, Crompton and Knowles Corporation, was identified. Qualification testing of the dye from the new source must be conducted prior to use.

Chemical Agent Monitor (CAM)

The CAM was a hand held device for monitoring chemical agent contamination on personnel and equipment, which detected and discriminated between nerve and mustard agent vapors. The CAM was fielded to TRADOC in December 1988 for use in training classes and at the Chemical Decontamination Training Facility. A customer test was conducted to validate operational training and doctrine and maintenance capability to satisfy the provisions of the type classification standard action. A special in-process review was conducted to present the results of the customer test. The in-process review decision was to proceed with fielding of the remainder of the limited production CAMs and to proceed with plans for full production. A maintenance contract was awarded to Graseby Ionics, the UK developer of the CAM, to provide maintenance for the limited production CAMs until such time that the Army fielded an organic maintenance capability. On 6 September 1989, CAM was fielded to the U.S. Army Technical Escort Unit and a DA unit at the Edgewood Area, Aberdeen Proving Ground. On 26 September 1989, the first unit equipped (FUE) in USAREUR occurred as the CAM was fielded to the V Corps in Geinsheim, West Germany.

Improved-CAM (I-CAM)

The I-CAM was designed to reduce the maintenance burden of the CAM. The I-CAM program included an Engineering Study Program, Foreign Weapon Evaluation, and Product Improvement Program. The Engineering Study Program was completed in FY89 and the I-CAM Foreign Weapons Evaluation (FWE) was approved by the Office of the Under Secretary of Defense (OUSD) on 24 August 1989.

Economic analyses were prepared for 5 optional ways of placing the I-CAM configuration into the field. Savings realized from these options ranged from \$81.01M to \$265.99M over the life cycle of the CAM. These economic analyses were included in the Materiel Change Documentation (MCD) for the I-CAM product improvement program, which was submitted in October 1989.

M81 Simulator, Detector Unit, Chemical Agent Automatic Alarm

The M81 was a training device for the M8A1 Automatic Chemical Agent Alarm. Initial production deliveries were completed in 1989, and the M81 was fielded to TRADOC, WESTCOM, FORSCOM, and U.S. forces in Korea. A follow-on production contract was awarded in 1989 for an additional 692 M81 Simulators.

Pocket Radiac

The Pocket Radiac (PR) was a compact, multi-function radiac instrument for tactical dose-rate and total dose measurement of nuclear radiation on the battlefield. During FY89, two prototype models were delivered by the contractor, SAIC, for testing by CECOM. During the testing program, design changes were recommended to the contractor. They were implemented and their success was demonstrated by additional testing. The PR now measured gamma radiation across the required range of 0.1 to 1000 centigrays per hour with an accuracy well within the plus or minus 20% accuracy specified. A six-button keypad plus sophisticated firmware made it easy to check battery voltage and dose-rate, and to establish alarm thresholds. Further work was planned to provide the required dose capability using P-MOSFET and neutron diode technology.

Following the test phase and a Critical Design Review, a Special IPR (SIPR) was conducted on 28 September 1989. As a result of the SIPR, the development program was restructured from an engineering development by-pass to a standard Advanced Development/Engineering Development program, reflecting in large part the technology maturity problems experienced in advanced development.

Advanced Airborne Radiac System

The Advanced Airborne Radiac System (AARS) was a compact, computerized airborne radiological survey, data collection and transmission system for rapid processing of battlefield contamination information. The AARS project continued in the demonstration and validation phase, with initial field/flight testing of a stand-alone system in an OH-58C aircraft at AERA, Lakehurst, NJ. A number of technical problems were resolved, and the project proceeded with successful flight tests demonstrating system feasibility. However, a recent reexamination of the aerial platform requirements and redefinition of the ROC by the Aviation School changed the requirement from a stand alone, self-contained system to a system integrated into either the OH-58D or LHX aircraft. This reexamination placed the preparation of the system specifications on temporary hold. A feasibility study to evaluate the alternatives would be initiated in early FY90.

AN/VDR-2 Radiac Set

The AN/VDR-2 Radiac Set was a digital autoranging radiac device used to detect and measure beta particles, X-rays and gamma radiation in a fallout field. Fielding of the AN/VDR-2 was successfully completed in USAREUR on 28 July 1989. The AN/VDR-2 replaced two instruments, the IM-174/PD and the AN/PDR-27. It was the first instrument of its kind designed for installation in all types of tactical vehicles capable of detecting and measuring radiation. It could also be hand held to detect and measure nuclear contaminated equipment, food, water and personnel down to background levels. The AN/VDR-2 also had the capability of time-integrating the dose-rate counts, displaying the cumulative dose on command.

AN/PDR-75 Radiac Set

The PDR-75 Radiac Set was comprised of a reader and individual dosimeters. The CP-696/PDR-75 Radiac Computer Indicator was the reader required to measure and compute the individual Radiac detector's dose. The reader had two separate reading channels, gamma and neutron. A digital meter displays a combined reading of the two separate reading channels.

The AN/PDR-75 Radiac Set was fielded to USAREUR in June 1989. The third shipment to USAREUR in September 1989 brought the total radiac sets shipped to 740. Two follow-on production contracts have been awarded, and the contractors successfully completed first article testing during FY89. First deliveries were anticipated to take place in May 1990.

Chemical Weapons Treaty Verification

The treaty office at CRDEC provided technical support to the U.S. Arms Control and Disarmament Agency (ACDA) for the U.S. National Trial Inspection in February 1989, which was conducted at ARZO Chemical Inc, Gallipolis Ferry, West Virginia. The Treaty office provided sample collection and analysis, review of equipment and technical data, as well as an audit of production records. The office also conducted the inspection of the draft plans and procedures and provided inspection personnel.

The Assistant to the Secretary of Defense, Atomic Energy, tasked CRDEC to prepare a briefing for the DOD CW Steering Committee. The briefing was presented to the OSD CW Steering Committee on 17 March 1989 and to the Chief of Staff, U.S. Army, 12 June 1989 and covered the following areas:

- * Assessment of technologies for current, emerging, and future CW agents.
- * Assessment of capabilities to produce and weaponize CW agents.
- * Development and analysis of potential "Cheating" scenarios.

- * Assessment of U.S. ability to execute on-site challenge inspections.
- * Assessment of impact of technological advances on U.S. ability to verify compliance.
- * Development of a forward-looking CW verification and compliance program.

CRDEC also prepared and submitted a detailed Execution Plan for a RDT&E Program to DA at the end of FY89. This plan was in support of the proposed DOD FY90 program to Congress on Treaty Technology. This plan dealt with the issue of how to provide technical support to the ongoing CW treaty process and represented a more detailed level of planning than had been previously achieved. The plan was consistent with the "CW Technologies Review" briefing discussed above.

XM291 Skin Decontamination Kit (SDK)

The U.S. Army Medical Materiel Development Activity (USAMMDA), located at Fort Detrick, MD, developed the XM291 SDK to replace the M258A1 Personal Decontamination System. USAMMDA had no capability for large scale procurement and fielding of such items, therefore USAMMDA requested AMCCOM support in producing and fielding the XM291 SDK. AMCCOM and USAMMDA entered into a memorandum of agreement, which was to be amended yearly, to allow CRDEC to perform functions such as technical data package (TDP) development, producibility support, quality assurance, and integrated logistic support. CRDEC would perform these functions in order to ensure a complete TDP and production readiness.

A memorandum of notification was processed and sent by CRDEC to notify the users that a new item would be available to the field by September 1990. The CRDEC support to USAMMDA would continue until the item was adopted during Type Classification, projected to take place on 28 November 1989.

Individual Equipment Decontamination (IED)

The IED kit development program was based on the Kit, Individual Equipment Decontamination Letter Requirement. It was thus a restructuring of the M280 DKIE Pre-Planned Product Improvement (P3I) program. Two options existed for the design of the IED kit. The reactant-solvent decontaminant contained in the M280 DKIE packet number 2 would be competed against a resin decontaminant contained in the XM291 Skin Decontamination System. The more advantageous decontaminant would be determined from comparative agent testing and then developed into an IED kit. The resin decontaminant had been tested on M16A2 rifles to demonstrate that such a decontaminant would not degrade the normal function of the rifle. Based upon testing to date, the U.S. Army Test and Evaluation Command has assessed the risk of imposing a malfunction on the M16A2 rifle due to the presence of residual resin from the XM291 SDK as very low. On-going agent testing, at Dugway Proving Ground, UT, would be completed by March 1990, and a Decision In-Process Review, to select the more advantageous decontaminant, would be held in June 1990.

XM55/56 Smoke and Decontamination System

The XM55/56 System integrated the capabilities to perform large area screening in the visual/infrared spectrums and to provide hasty decontamination along with supporting the deliberate decontamination mission of the Modular Decontamination System. The smoke generator screened visual and infrared and, following implementation of a programmed Pre-Planned Product Improvement (P3I), would also be capable of screening in the millimeter wavelength region. The decontamination capability of the XM56 would be provided by the XM22 High Pressure Washer, which provided high pressure water for the removal of agent

contamination/mud from the vehicle for hasty decontamination. It would also be used to remove agent contamination/mud prior to the decontaminant application for deliberate decontamination.

The XM55/56 Smoke Decontamination System program went through many changes as a result of redirected or revised systems requirements. The XM157 variant was eliminated from the program, and this battlefield requirement would be satisfied by a new start program called the Large Area Mobile Projected Smoke System (LAMPSS). The XM56 system was redefined at the direction of the U.S. Army Chemical School to utilize the XM22 High Pressure Washer Component of the Module Decontamination System (MDS).

The millimeter wave module of the XM55/56 was transferred back to the 6.2 technology base program through a correspondence In-Process Review (IPR) in early FY89. This action occurred because major technological challenges still remained unresolved. This module would now be a Pre-Planned Product Improvement (P3I) scheduled for 1993.

The contract program with MRC Chamberlain on the XM55/56 was delayed due to innumerable quality deficiencies at the contractor's plant and slow progress on the basic system design. The program was in the process of undergoing a major restructuring and rescheduling as a result of these problems, and the projected date for type classification of the XM55/56 was delayed to FY93.

XM19 Nonaqueous Equipment Decontamination System (NAEDS)

The U.S. Army and Air Force were jointly developing the NAEDS to decontaminate high technology avionics, electronics, optics, and communication equipment. The NAEDS used a chlorofluorocarbon solvent (Freon 113) to dissolve chemical agents and wash off nuclear and biological particulate contamination. A common electronics cleaner, Freon is fully compatible with sensitive equipment.

In 1989 a list of specific Army units, within USAREUR, that require the fixed site NAEDS, was established. A total of 52 systems were to be purchased for the Army and an additional 140 systems for the Air Force. Because the Army users were mainly depots (TDA units) and specific TO&E units within USAREUR, the NAEDS would not be Type Classified. Instead, the system would be standardized for Army use in accordance with AR 70-61 (Type Classification of Army Materiel).

The major efforts of 1989 consisted of planning and contract administration. The program strategy for NAEDS development effort was modified to include termination of the Proof-of-Principle (POP) contract (General Atomics, San Diego, CA) and award of a new competitive development contract to complete the system development. A stop work order was issued to the POP contractor on 6 July 1989 after substantial cost growths were identified. The POP contractor was continuing limited efforts to maintain program momentum while the new contract was solicited. These efforts included fabrication and delivery of two test prototypes and completion of level 2 drawings. Delivery of the prototypes were planned for December 1989 and April 1990.

A task contract was awarded in November 1989 for preparation of commercial part drawings. The Test and Evaluation Master Plan (TEMP) was revised to reflect the new test requirements and was being staffed for approval in FY90. These new requirements were a lower ambient operating temperature and the elimination of Operational Testing (OT). Also, in 1989, test plans were completed for freon compatibility with the Chemical Agent Monitor (CAM) to be used with the system. System process testing plans were also revised to gather decontamination effectiveness and equipment compatibility data on the NAEDS. These tests were scheduled to start in the second quarter of FY90.

Modular Decontamination System (MDS)

The MDS was comprised of three independent modules: the XM21 DS2 Pump module, the XM22 High Pressure Washer module, and the XM23 Decontaminant Application module. These new development items would be trailer transportable and would be supplemented by other standard Army water pumping and heating equipment to completely equip Army units for decontamination operations. The program was being conducted in accordance with the guidelines of the Army Streamlined Acquisition Program (ASAP) in order to field an improved capability as early as possible and to provide future improvements as technology advances.

The XM21 and XM22 designs were completed, and drawings of the two systems were prepared to document the design. The design of the XM21 was done under contract while the design of the XM22 system was done in-house. Also, XM21 test prototypes were fabricated under contract and delivered to CRDEC for use in Engineering Design Tests (EDT) scheduled for late 1989. The in-house fabrication of XM22 systems was initiated during that period. Fabrication of XM22 EDT systems was expected to conclude in November 1989, and the EDT was scheduled to immediately follow fabrication.

Aircrew Protective Mask (ACPM)

The ACPM was in exploratory (6.2) development and was to be transitioned to advanced (6.3) development in FY91. This mask system was being designed to fully meet the needs of the Army aviation community and would eventually replace the M43E1 mask. The ACPM had the advantage of providing the required CB protection with or without the aid of forced ventilation air and of allowing for compatibility with aircraft sighting systems and night vision devices.

During FY89, CRDEC personnel continued the development of the optical correction system for this mask and designed the lens attachment system utilizing in-house computer aided design (CAD) facilities. A lens defogging system, second-skin hood, and mold sizes (this would be a 4-sized mask system) were all but finalized, and prototypes would be produced in FY90.

M43E1 Mask Preplanned Product Improvement (P3I)

The M43 mask system, originally designed for the AH-64 Apache Battalion of rotary-wing aircraft, was being improved to expand its use to include all rotary-wing aircraft. This improvement included the following: vision correction system, facepiece assembly neck closure, auxiliary motor-blower, standard battery for the primary motor-blower, and improved NBC survivability. The M43E1 mask program completed its third year of engineering (6.4) development as a P3I program. FY89 was spent conducting engineering design tests as a precursor to the Technical Test/User Test (TT/UT) scheduled for FY90 and in fabricating facepiece assemblies as well as primary and auxiliary motor blowers (M43E1 mask systems) and getting these items accepted for TT/UT testing scheduled to start in the first quarter of FY90.

Chromium-free (ASZ-TEDA) Carbon

Chromium-free (ASZ-TEDA) Carbon was a new adsorbent for military gas filters that was effective in removing standard chemical warfare agents but did not contain hazardous impregnants as did the current adsorbent, ASC Carbon (hexavalent chromium).

During FY89 process engineering studies were conducted that identified the best impregnation methods to produce ASZ-TEDA Carbon. Late in FY89, a lot of about 6,000 pounds of the chromium-free carbon was produced. As FY89 closed, long term environmental exposure of the ASC-TEDA Carbon was initiated. Fielding of Chromium-free Carbon was scheduled for the second quarter of FY91.

New Reactive Sorbent Development Program

The New Reactive Sorbent Development Program would provide enhanced protection against emerging threat agents while maintaining a high level of protection against classical agents. During FY89, the impregnant screening phase of the program was completed with the identification of a combination of impregnants which provided an absorbent with the performance requirements sought. The program then moved into the optimization phase under which it was determined how to best load each impregnant on the carbon in order to provide the best overall performance. Carbon samples were prepared by impregnating with five different impregnants at various loading levels. Agent challenge testing of these carbons were conducted, and the data was being statistically evaluated to determine the best impregnant loadings. Data collected to date indicates that a very effective new adsorbent would result from this effort. Fielding of this New Reactive Sorbent was scheduled for the third quarter of FY93.

Filter Performance Assessments

This program assessed the ability of military filters to remove emerging threat agents. During FY89, the program effort consisted of agent challenge testing of ASC Carbon beds at a range of bed depths and airflow velocities to simulate military filters. FY89 also saw preparations continued to conduct nonstandard agent challenge testing of full scale military filters. Filters filled with ASC Carbon and with the New Reactive Sorbent Carbon would be tested for filtration performance at the wide range of environmental conditions experienced on the battlefield.

Ammonia Off-Gassing Studies

At the request of Wright-Patterson Air Force Base, CRDEC conducted an extensive evaluation of the concentration of ammonia emitted from C-2 canisters under various environmental conditions. The study showed that at typical temperatures and humidities frequently experienced at airfields, the level of ammonia off-gassing was well below the health standards for long term exposure to ammonia. However, at worst case conditions, ammonia off-gas levels were found to be borderline in regards to these health standards. The new carbons currently under development would be low in ammonia content, and thus off-gassing would be dramatically reduced with the implementation of these carbons.

Advanced Canister Development

During FY89, a program was formulated to develop an advanced canister for the M40 Series Protective Masks. This canister would provide enhanced filtration performance so that high levels of protection would be provided at high breathing rates while at the same time reducing the physiological burden of breathing resistance. A joint CRDEC-Marine Corps funded program would be initiated in FY90 to develop this state-of-the-art protective mask canister.

Advanced Air Purification

Exploratory development of air purification using regenerable filtration and electrical discharge plasma decontamination of air continued in FY89. A 250 cubic feet per minute prototype based upon the regenerable filtration concept of pressure swing absorption was delivered to the U.S. Navy for functionality and limited chemical warfare (CW) simulant agent tests.

M20E1/XM28 Simplified Collective Protection Equipment Pre-planned Product Improvement (SCPE P3I)

The SCPE P3I would improve the existing M20 SCPE system by increasing the allowable entry-exit rate, providing liquid agent protection, incorporating a medical airlock, and expanding the protected area. The M20E1/XM28 Technical Data Package, consisting of over 500 drawings, was completed and accepted

under Government configuration control. Fabrication of M20E1/XM28 Technical Test and User Test hardware was initiated. A total of 27 systems would be available for testing in February 1990. The Technical Test Readiness Review concluded that system capability had been demonstrated sufficiently through Engineering Design Testing and Reliability Qualification Testing to proceed to the Technical Test/User Test Cycle. A Memorandum of Agreement was drafted between AMCCOM and TROSCOM defining fielding responsibilities for providing the XM28 SCPE to the corps hospital total collective protection effort.

Heavy Force Modernization (HFM)

Guidance would be provided to HFM contractors on NBC survivability over the entire effort. The entire CRDEC technical base effort was being conducted to allow HFM to be a "smart consumer" in reviewing contractor proposals/technologies. During the HFM effort, CRDEC would provide continuous guidance to HFM and their contractors and generally support the program.

CRDEC also provided extensive collective protection, detection, smoke, NBC survivability and Auxiliary Power Unit (APU) environmental control inputs and overall support to the HFM effort. The technical base in a variety of areas was being accelerated to ensure application of the technologies for an FY92 start of full-scale development.

The overall objective of the Collective Protection Technical Base effort was to provide the HFM program with data on several advanced filtration technologies candidates for improved NBC filtration systems. The primary feature of these systems was that they allowed for improved logistics in the field by eliminating the need for periodic filter changes. The two candidate advanced collective protection technologies were pressure swing adsorption (PSA) and catalytic oxidation.

The objectives of the detection technical base were to insure that the Multiple Integrated Chemical Agent Detector (MICAD) system, a separate 6.3B CRDEC program, could be integrated into the common chassis structure and vetronics, and to develop a full-scale development specification.

The objectives of the smoke technical base were to gather data on infrared and millimeter wave sustaining smoke materials and to disseminate techniques and produce performance specifications. Information would be provided to the HFM PM and contractors over the three year common chassis effort. Final performance specifications would be delivered by the fourth quarter of FY92.

The objectives of the Belvoir Research, Development and Engineering Center technical base effort were to gather data on potential APU/ECU (environmental control unit) technologies and to deliver performance specifications on those systems. The full-scale development specifications would be ready by the fourth quarter of FY92.

M258A1 Personal Decontamination Kit

The M258A1 Personal Decontamination Kit was the standard Army kit for decontaminating the skin of the individual soldier upon exposure to Chemical Agents. The kit consists of a plastic carrying case containing 3 packet "1's" and 3 packet "2's." Packet "1" contained a rayon-polypropylene blend nonwoven towelette soaked in an alkaline solution. Packet "2" contained a rayon-polypropylene blend nonwoven towelette impregnated with the chemical Chloramine B. The towel was wrapped around a screen pouch containing 3 glass ampuls filled with an acidic solution. The use of 1 packet 1 and 1 packet 2 would decontaminate all known chemical agents.

In the first quarter of FY89, CRDEC's Research Directorate determined that, when exposed to excess moisture or heat, the chloramine B would break down into two compounds, one of which attacks the rayon in the towelette to generate gasses. As a result, the chloramine B loses virtually all of its activity.

Three contractors had produced the kits to the same technical data package but the original contractor produced consistently better kits. A contract was let in the fourth quarter of FY89 with Mine Safety Appliances, the original contractor, to produce 1.8 million kits and develop a process specification for their production. In the event that the M258A1 kit is no longer produced, the process specification would be applied to the M280 Individual Equipment Decontamination Kit program.

A/E32U-8 Lightweight Decontamination System

The A/E32U-8 Lightweight Decontamination System consisted of a gasoline engine driven pump and multi-fueled water heating apparatus, a 1,500 gallon self-supporting rubberized fabric tank, and an accessory kit that contained hoses, wands, and personnel shower hardware. The engine/pump/heater unit weighed approximately 360 pounds and could be carried by 4 soldiers. The A/E32U-8 could supply warm water for showers and steam for the decontamination of equipment. In May 1989, 18 A/E32U-8's were fielded to the 101st Mountain Division, 59th Chemical Company, at Ft Drum, NY. This was the final A/E32U-8 fielding. Fielding for the A/E32U-8 had begun in FY 86, and a total of 753 had been fielded using the total package fielding concept. AMC personnel had conducted an on-site inventory and 100% operational check-out prior to handing the equipment over to the soldiers.

M17 Lightweight Decontamination System

The M17 Lightweight Decontamination System was an upgraded design of the A/E32U-8 Lightweight Decontamination System. Changes were made to improve safety and human factors, including a relocated and redesigned control panel, trigger activated spray wands, a safer fuel can bracket, and quick disconnect couplings for easy connection of hoses to the apparatus.

The M17 Technical Data Package was established in accordance with the license agreement with Engineered Air Systems, Inc., and was made available for competitive procurement. The TDP was used to carry out the First Article and Initial Production testing on the first production contract. The testing was successfully completed and full production was begun. The first fully competitive buy of the M17 was awarded to Keco Corp in the fourth quarter of FY89.

Large Filter Initial Production Facility (IPF)

The Large Filter IPF was the first initial production facility built by the Army to support chemical defense items. The facility would be located at PBA and would serve as a mobilization and production base to support collective protection filters. FY89 accomplishments include the procurement of some of the equipment needed to build the M48 filter, and the preparation of contracts to both renovate the existing building and install equipment.

Mask, Individual, M40

Major contractual and technical issues arose during FY89 which precluded initiation of sustained production and fielding of the M40/42 protective masks. The resolution of these issues remain for the next fiscal year. The New Equipment introductory briefing team visits were conducted at five sites in preparation for the fielding of the M40 Special Purpose Mask. The five sites were WESTCOM (Johnston Island), USAREUR, Pine Bluff, Tooele, and the Chemical School at Ft. McClellan.

Mask, M43

The major accomplishment in the M43 Mask program was the Total Package Fielding of the M43 to the 4/6th Cavalry at Ft. Hood, TX, in August 1989. This was completed despite numerous contractual and technical problems with the producer of the M43 mask.

Concurrent with the initial delivery of M43 masks in September 1988, the production contractor discovered cracks in facepiece assemblies which were still in the plant. The contractor halted production and proposed the addition of one part of wax per hundred parts of rubber to the faceblank formulation to reduce the chance of a reoccurrence of cracking. When the First Article inspections were repeated for the faceblanks, it was discovered that they did not meet the minimum thickness requirement. The faceblank molds were reworked to correct this problem, as were the molds for the blower components to correct a problem with excessive knitlines.

These problems, combined with quality deficiency reports (QDRs) stemming from hardware delivered to the preplanned product improvement (P3I) contractor, delayed the next delivery of masks until May 1989. The contractor succeeded in making one more delivery of masks in June 1989 before finding cracks in facepieces made with the new rubber formulation which resulted in the contractor again halting production.

CRDEC formed a task force to investigate all potential causes of the cracking. Ozone was determined to be the cause of the cracking. Testing indicated that the addition of an antiozonant should correct the problem. Resolution of the contractor's claim that the Government was responsible for the rubber formulation was the major roadblock in the resumption of mask production. Deliveries were expected to resume in February 1990.

Combat-Vehicle-Defensive Obscuration System (CVDOS)

CVDOS consisted of the new Multisalvo Smoke Grenade Launcher (MSGSL) and a new development millimeter wave screening grenade. The Vehicle Engine Exhaust Smoke System (VEESS) was deleted from the program in FY89 because the requirement was not clearly defined. The training grenade was deleted from the program in FY89. A separate Training Device Requirement (TDR) was being prepared by Chemical, Armor, and Infantry Schools for the training grenade. Separate Requirements Documents were being prepared for MSGSL and millimeter wave screening grenade.

Technical Feasibility Testing (TFT) of the XM6 Discharger for the CVDOS multisalvo smoke grenade launcher program was completed in June, and the Milestone I/II IPR package was prepared and distributed. AMC, the Logistics Evaluation Agency (LEA), TECOM and the Operational Test and Evaluation Agency (OTEA) approved the recommendation to proceed into 6.4 Full-Scale Development pending final TRADOC approval of the ROC and IPR position.

XM81 Millimeter Screening Grenade

The XM81 millimeter screening grenade program was progressing through the TFT phase. A decision was made in September 1989 to transition management of MSGSL and XM81 Grenade to CRDEC from PM Smoke.

M1059 Smoke Generator Carrier/M157 Smoke Generator Set

Following New Equipment Training and New Material Introductory Briefings (NMIB), 77 of the smoke generator systems were released. The contractor delivered 125 M157 Smoke Generator Sets for wheeled vehicle applications and NMIB were initiated for fieldings scheduled to begin in the second quarter of FY90.

M825E1, 155mm, WP Smoke Warhead

Type Classification of the improved M825E1, 155mm, white phosphorus smoke warhead was achieved in March. The projectile base was changed to a cheaper "all steel" piece with dimensional improvements to correct flight instability problems associated with the original M825.

BLU-80/B BIGEYE Bomb

The BIGEYE bomb was an aircraft-delivered weapon designed to generate persistent nerve agent VX from two non-lethal chemicals. The bomb, in the 500-pound class of free-fall weapons, is stabilized by fins. The non-lethal chemicals are contained in separate compartments until the mixing system is activated. The agent is mixed and disseminated over the target by using a droppable spray tank technique, which prevents the aircraft from being contaminated by the agent.

This was a Joint Service Program, with the Navy and Air Force as the users. The Army provided technical support to the Navy and had direct responsibility for all chemical aspects to include: (1) conducting full-scale bomb reactor toxic agent chamber tests beginning in FY90, (2) development of toxic agent and binary reactants/simulants, (3) development and documentation of bomb fill and close procedures, and (4) providing technical information to the Navy.

During FY89, a chamber test plan was developed for the full-scale bomb, emphasizing enhanced quality assurance and statistical experimental design as well as establishing the technical basis to certify the test chamber for high temperature operation. The chamber test program would test BIGEYE bombs over a range of temperatures, analyze the resulting agent, and determine its biotoxicity. The Army's portion of the BLU/80/B Bigeye Bomb Facilities Program included the construction of a fill/close facility for the BLU-80/B Bigeye Bomb and a production facility for the chemical intermediate QL, both to be located at Pine Bluff Arsenal.

The major construction Army contract for the BIGEYE fill/close facility was completed in FY89. This effort provided the building, roads, fences, and utility substation that would be needed by the fill/close facility.

As of 30 September 1989, the overall facility project was 70 percent complete and construction work was 38 percent complete. Also, as of 30 September 1989 all facility structural work was complete, inertia welder and rework stations were installed, all major electrical equipment was set and the gravity conveyors were installed.

The FY89 Appropriations Bill contained language that restricted the Navy from entering Low Rate Initial Production. This bill granted authority to procure production configured weapons for the conduct of Operational Test IIc (OT-IIc) using funds approved prior to FY89.

As of 30 September 1989, overall design of the QL production facility was 72 percent complete. Due to a tight project schedule, the construction phase overlapped the design phase. The majority of the site was prepared for construction by September 1989. Foundations for several reaction and purification structures were completed, 425 out of 550 drilled piers required for major equipment installation in the tank farm area, the waste treatment area, and some of the raw material storage areas were completed. Major equipment began arriving at the site for installation, and at the end of FY89, construction was 10 percent complete.

M687 155mm Binary Chemical Projectile Production

During FY89 The Marquardt Company (TMC) continued production of the M687 155mm Binary Chemical Projectile dual canister components. TMC provided M20 canister components to Pine Bluff Arsenal (PBA), and M21 canisters to Louisiana Army Ammunition Plant (LAAP). PBA filled the M20 plastic containers with methylphosphonic difluoride (DF), heat sealed, and performed helium leak checks. The containers were then inserted into a steel sleeve, welded, helium-leak-tested, painted, packaged, and put into storage at PBA. LAAP received the M21 canister, loaded it into the projectile with final packout on the pallet, and then shipped it to Tooele Army Depot for storage.

Since being awarded the contract in October 1987, TMC had great difficulty in achieving full production and thus required a concentrated technical and management effort by the CRDEC project team. Because of TMC's non-performance, a unilateral schedule with considerations was placed on TMC in December 1988. Subsequent to the unilateral schedule with close Government monitoring, TMC took the necessary actions to rectify the poor performance on the contract and from July 1989 to the present has come closer to meeting the contract delivery requirements.

With the increased delivery of M20 component parts, PBA has ramped up to near full production rate, but would ramp down and stop production during the first quarter of FY90 if the supply of DF runs out. The supply of DF was limited by the supply of its precursor, Dimethylphosphonic Dichloride (DC). The current supply of DC came from the recovery of existing material from Rocky Mountain Arsenal. The construction of a new DC production facility began at PBA in the first quarter of FY89, with completion scheduled for the second quarter of FY90 and full production for the third quarter of FY90. The production DC would be used to restart M20 production in the third quarter of FY90. To make up some of the short fall of TMC M20 canister components, fabrication began during the third quarter of FY89 at CRDEC Experimental Fabrication Division on a limited number of M20 canister components. Shipment of these components to PBA was scheduled for the first quarter of FY90.

LAAP was responsible for fabricating the shell metal parts and loading, assembling, and packing the M21 and M21 simulant canisters, as well as procuring/assembling the projectile pallet and shipping the rounds to their desired destination. LAAP shipped a number of empty rounds to DPG for dissemination tests which started the third quarter of FY89 and is planning to load, assemble and pack simulant canisters into the M687 training projectiles which were to be shipped to various training sites in the first quarter of FY90. LAAP fabricated a number of projectile shell bodies/parts and started accumulating M21 canisters from TMC. Loading, assembling and packing of rounds for the Initial Production Test (IPT) at DPG was scheduled to start in the first quarter of FY90, with follow-on procurements scheduled to be awarded during FY90.

Multiple Launch Rocket System - Binary Chemical Warhead

The producibility effort for the Multiple Launch Rocket System (MLRS) Binary Chemical Warhead (BCW) was divided into two major tasks: (1) the fill/close facility for the XM277 injector assembly, and; (2) the producibility engineering and planning (PEP) in support of the BCW full-scale development (FSD) program.

The MCA construction contract was awarded to CWR Construction Company of North Little Rock, AR on 2 May 1989. Ralph M. Parsons Company, the process equipment contractor, submitted the complete 90 percent design package for the full production facility between June and September 1989. As a result of a Congressional mandate to establish a pre-production line to fill Prototype Qualification Test (PQT) hardware, an undefinitized contractual action was awarded to Parsons in September 1989, which allowed Parsons to proceed with phase one construction. The pre-production and full-production designs would be completed in December 1989, and phase one construction would be completed by May 1991.

In April 1989, responsibility for PEP formally transitioned from the U.S. Army Missile Command to CRDEC. This was in line with the transition of program responsibility from PM, MLRS to PM, Binary. In May 1989, Material Technology Laboratories, Watertown, MA, was tasked and funded to conduct a study of test methods for the warhead chemical (EA5969) and thickener.

M157 Smoke Generator Set

The M157 Smoke Generator Set (SGS) was developed in response to an urgent TRADOC requirement to provide large area mobile smoke for both mechanized and motorized forces. The M157 SGS consisted of two M54 Smoke Generators, an air compressor assembly, control panel assembly, fogoil pump assembly, and fog oil tank. The mechanized version consisted of the M157 SGS mounted on the M113 Armored Personnel Carrier and was designated the M1059 Smoke Generator Carrier. The motorized version consisted of the M157 SGS mounted on the M1037 High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) with the M284 Smoke Generator Mounting Kit.

The M157 SGS and the M284 Mounting Kit went into production after successfully completing First Article Testing in February and March 1989, respectively. A TRADOC First Unit Equipped date was scheduled for February 1990.

Hexachlorethane (HC) Replacement Product Improvement Programs

HC composition was used in the M8 smoke hand grenade and the M4A2 floating smoke pot. In recent years, toxic effects from HC smoke exposure were observed more frequently. Since WWII there had been 70 documented fatalities due to HC smoke exposure during training exercises or from incidents of misuse. Additionally, workers involved in the blending and loading of HC mix were exposed to suspected carcinogens.

In FY88 the Army initiated a Product Improvement Program (PIP) to replace HC with a less toxic white smoke. In July 1988 a contract was awarded to SRI International to investigate candidate replacement smoke formulations which had been previously identified during the HC replacement engineering study. Contractual problems forced contract termination in September 1989. The remainder of the effort would be completed by Pine Bluff Arsenal and CRDEC, in order to determine the optimum alternate smoke mix formulation. In conjunction with smoke output maximization, toxicity minimization of the alternate smoke mixes was being pursued through evaluation of toxicity properties at the U.S. Army Biological Research and Development Center (USABRDL) at Ft. Detrick. The PIPs for HC replacement were fully underway and would incorporate the replacement formulations into the smoke pot and the grenade in FY91.

Large Area Mobile Projected Smoke System (LAMPSS)

The LAMPSS program grew out of a need for both mobile large area screening and mobile projected smoke on a single vehicle. The LAMPSS would provide Chemical Corps mechanized smoke units better able to support the maneuver commander by providing Large Area Screening in the visible through millimeter wave regions of the electromagnetic spectrum and by providing projected screens in the visible region. The projected capability would be used when the Large Area Screening System could not be utilized due to unfavorable winds or threat location. The LAMPSS would replace the M1059, which has a large area (visual only, one hour, no projected smoke) subsystem.

The system would be as mobile as the units it supports and it is envisioned that it would be mounted on a Bradley Fighting Vehicle derivative chassis. This chassis was chosen to allow for the increased weight and volume. The smoke subsystems would be housed in an armored enclosure in the rear of the vehicle. The large area system would consist of a power module such as that used with the XM55 Large Area

Smoke Generator and associated storage containers and feeding devices. The projected smoke system would consist of a launcher capable of firing Hydra 70 2.75-inch rockets with XM264 smoke warheads. There would be an on-board computer, navigation positioning, range finding, and fire control systems associated with the projected smoke system.

A demonstrator vehicle was fabricated in-house. It consisted of the Hydra 70 launcher system from the Apache/Cobra Helicopters mounted on an M1059 chassis. A major demonstration was conducted in late July 1989 at Yuma Proving Ground, and a video presentation was developed from the demonstration.

The program Acquisition Strategy was approved and other program documentation was initiated for a 6.3 contract award in early FY91. Type classification for the LAMPSS was planned for late FY96.

Millimeter Wave Obscurant

During August 1989, a large area demonstration of the Millimeter Wave (MMW) Module of the XM55 Large Area Screening System was performed. It was significant for several reasons. First of all, it was by far the largest release of MMW obscurant, with a total of greater than 1,000 pounds. Two years were required to obtain environmental clearance. It was the first test using multiple (6) MMW obscurant generators. It required technical support of specialists from several agencies. Since the MMW obscurant was new to the testing community, new instrumentation and methodologies had to be developed to evaluate it. Several experiments were performed during this demonstration to test new concepts and modified instrumentation.

Since in-field concentrations the MMW obscurant was not visible, visual imaging systems were of little use in determining dimensions. The extent of the cloud was critical information in determining cloud effectiveness, proper particle size, and hardware dissemination efficiency. Thus, the use of Laser Induced Detection and Ranging (LIDAR) systems operating at infrared frequencies showed promise as tools for determining obscurant cloud boundaries. Another critical parameter used to evaluate obscurant clouds was concentration, which could not be obtained from conventional particle sampling technology. Even if the time resolved concentration could have been obtained by this method, setting up, collecting, and analyzing the samplers from a grid adequate for large area testing would be prohibitively expensive and time consuming.

Fortunately, an alternative appears to be within reach. If the dynamic range of the infrared LIDAR and MMW radar systems is such that the receivers are not saturated, then backscatter information is obtained across the entire line-of-sight. With the relationship between backscatter and concentration known, then topographical representation of concentration is possible by deconvolution backscatter data. This is a significant accomplishment in the area of field analysis of obscurant clouds because it is cheaper, less time consuming, and allows near real-time output of the results.

At the request of the Chemical School, the Smoke Technology Branch conducted an experiment to demonstrate the effects of MMW obscurants on selected military and commercial equipment. The demonstration was conducted in a "breeze tunnel," simulating field dosages projected from previous tests/studies. The equipment was tested in both operating and non-operating modes. No adverse effects on the tested equipment were evident thus far. The testing was expected to be completed in the first quarter of FY90 and the results would then be made available.

Underground Test

AMC continued preparations to participate in the Defense Nuclear Agency's (DNA) Distant Light Underground Test in 1991. Our experiment in this test would address the effects of System Generated Electromagnetic Pulse on Army equipment. The Nuclear Division arranged for the procurement of the

Army Tactical Command and Control System common hardware and software by the Harry Diamond Laboratories (HDL). In addition, a S-250 size shelter was acquired to commence preliminary above ground tests. AMC assisted DNA in determining potential Army equipment for their experiment.

Electromagnetic Pulse (EMP) Test Facilities

In January 1989, AMC announced the start of an Environmental Impact Statement (EIS) for EMP simulators at the Woodbridge Research Facility (WRF). Following further consideration, AMC decided in May, 1989 not to resume free field EMP testing at WRF and terminated the EIS.²⁴ An environmental assessment for support operations was prepared, and it was announced that the EMP simulators would be relocated. A relocation study commenced in September 1989 to identify potential sites prior to initiation of National Environmental Protection Act documentation on the relocation process.

Defense Standards and Specifications Program (DSSP)

The AMC program for 1989 was successfully completed in the area of documentation. Interim guidance documents for program managers were completed and disseminated. Development of a new High Altitude Electromagnetic Pulse Military Standard 188-125A was initiated as well as an accompanying Handbook 423 Vol II. Testing efforts suffered setbacks with the termination of free field EMP testing at the Woodbridge Research Facility due to environmental concerns. Alternate test methods using continuous wave facilities were developed and implemented to allow verification of the EMP standards under development.

Army Systems Nuclear Survivability Action Plan

AMC concluded efforts on this program at the end of FY89 due to lack of HQDA funding support. Eleven systems had been assessed out of the 82 systems originally prioritized for consideration. A reduced effort to assess fielded systems was proposed by AMC to HQDA, which highlights systems identified by CINCs as most important. Approval and funding for this proposed effort had not been received.

Large Blast/Thermal Simulator (LBTS)

In 1989, AMC continued to provide technical support to the Defense Nuclear Agency in its efforts to characterize the LBTS design features. AMC's technical efforts focused on a probative tube, model of LBTS, and thermal valve operations. Also, AMC prepared a proposal to DNA which addressed how AMC would operate and maintain the facility upon its completion. DNA had established a program advisory group in 1989. HQ AMC and members of the HDL and Ballistics Research Laboratories provided both managerial and technical support to the Army's representative to the advisory group, the U.S Army Nuclear and Chemical Agency.

Nuclear Artillery/NATO Cannon Compatibility

The Nuclear Division continued its participation in the fourth Nuclear Artillery/NATO cannon compatibility working group in September 1989 at HQ USAREUR, Heidelberg, Federal Republic of Germany. The completed matrices of compatibility data for the interface control procedures were reviewed and updated, as well as schedules for the development of new howitzers. The discussions were very informative and would allow early discussions for potential Foreign Military Sales cases to take place and ensure certification of new howitzers prior to fielding of the new U.S. 155mm projectile.

²⁴For a further discussion of the environmental issue at the Woodbridge facility, see the LABCOM/HQ AMC interview with BG O'Neil, 15 Nov 1989.

M422 Artillery Fired Atomic Projectile

In July 1989, the Nuclear Division successfully conducted a Special In-Process Review for the M422 Product Improvement Program (PIP). The first phase of the PIP, which involve modification to the projectile rear body section, was underway. Procurement actions were initiated in September 1989 for phase 2, which included modifying the M613 containers which were in stock and buying new containers for the remaining quantities.

Follow-on-to-LANCE (FOTL)

This joint Department of Defense (DOD)/Department of Energy (DOE) program, the replacement for the aging Lance nuclear missile system, was awaiting approval of its required operating capability and final release of the Request for Proposal (RFP) to contractors for the missile assembly. Approved configuration, incorporating M270 launcher (MLRS) and Launch Pod Container (LPC) dimensions, may change pending Secretary of Defense decision on verification issue (nuclear identifiability), as projected disarmament treaties might require nuclear capable MLRS's to be externally distinguishable from non-nuclear capable weapons. Warhead design by DOE laboratories was on schedule through phase 2A.

Office of the Deputy Chief of Staff for Ammunition (DCSA)

Organization

As of the newly revised TDA of 1 October 1989, the authorized strength for the Office of the DCS for Ammunition (DCSA) was 66 civilian and 13 military positions. This compared to the previous authorized strength of 59 civilian and 12 military positions. The increase was due to the fact that the DCSA had obtained the day-to-day management of the Single Manager for Conventional Ammunition functions from the Executive Director for Conventional Ammunition (EDCA), along with 1 military and 7 civilian TDA slots, in order to streamline the Army's management of ammunition and the Single Manager for Conventional Ammunition assignment. This realignment was accomplished after much effort, staffing, approval by the Secretary of the Army and approval by the Secretary of Defense. The EDCA continued oversight over the SMCA function. On board strength as of 30 September 1989 was 53 civilian and 12 military personnel. MG Paul L. Greenberg continued in his position as DCS chief throughout the fiscal year.²⁵

Significant Issues

One of the most significant issues in FY89 was the realignment of functions between the Office of the EDCA and the DCS for Ammunition (DCSA). Other significant issues included the size of the ammunition procurement program and retaining the ammunition production base.

Future Size of Ammunition Procurement and Production Base

The size of the ammunition procurement program was also a continuing issue as was the retaining of the ammunition production base. All indicators were that ammunition acquisition funds would continue to decline in concert with the overall decline in the defense budget. These reductions would require reduced utilization of the ammunition production base. Congressional interest in both the ammunition

²⁵Unless otherwise cited, the information in this section was taken from the historical submission for FY89 from the DCS for Ammunition.

acquisition program and the status of the production base remained high since decisions regarding the ammunition program could impact their constituents.

Congressional Requirements

In CY89 the Office of the DCS for Ammunition participated in two formal congressional hearings involving both the Senate Armed Services Committee and the House Appropriations Committee. In addition, the office provided input for five other General Officer hearings. Congressional interest in the ammunition appropriation during this fiscal year Congressional hearings resulted in the requirement for the DCS to provide answers to over 300 questions for the record. The DCS also responded to over 175 other ammunition related inquiries, and gave briefings to or visited numerous Congressional representatives or their staff.

Long Range Research Development and Acquisition Plan (LRRDAP), FY1992-FY2006

DCSA participated in all phases of the development of the Field Long Range Research Development and Acquisition Plan (FLRRDAP), which focused on prioritizing programs/increments in the Program Objective Memorandum (POM) years (FY92-97) and projecting program profiles in the Extended Planning Annex (EPA) years (FY98-06).²⁶

Ammunition Acquisition Policy Letter

The House Appropriations Committee Report in FY88 directed the development of a comprehensive policy that would serve as a basis for future ammunition production base decisions. The policy statement was submitted in July 1988. The DCS for Ammunition directed that the policies contained in the report to Congress be converted into a policy letter that would provide direction and consistency in the management of ammunition acquisition. This was accomplished in November 1989. The Ammunition Acquisition Policy Letter consolidated guidance contained in procurement, production, and industrial readiness regulations and procedures into a single document. It set forth policy and guidance for conventional ammunition acquisition to include developing and maintaining an ammunition production base to support the Military Services' requirements.

Conventional Ammunition Working Capital Fund (CAWCF)

The CAWCF is a revolving fund for managing and reporting the procurement of ammunition components and their assembly into conventional ammunition. It was established in 1982 to serve as the vehicle to procure all Single Manager for Conventional Ammunition (SMCA) items and some non-SMCA items.

In March 1989 the Office of the Secretary of Defense criticized CAWCF for high unfilled order value, and directed the Army to clean up over-aged orders and identify how to reduce average delivery times. The Army took aggressive action to resolve over-aged CAWCF orders and to refine CAWCF operations to preclude future backlogs. Production lead times were reduced from an average of 32 months to an average of 29 months. Additionally, several initiatives to reduce average delivery time to the OSD target of 24 months were implemented. Delinquent orders were also reduced by 30 percent.

²⁶For further information on the LRRDAP, see the EDCA submission for the FY89 AHR in the AMC archives.

Ammunition Procurement Program Review (PPR)

The Ammunition PPR was held at AMCCOM on 17-21 July 1989, co-chaired by the ODCS for Ammunition and AMCCOM. Participants representing HQDA included representatives from the Assistant Secretary of the Army for Financial Management (ASA[FM]) and the Office of the DCS for Operations (ODCSOPS). Other participants represented the Marine Corps, TRADOC, PEO-Armaments, various PMs, and others. Individual AMCCOM item managers presented proposed programs which accommodated all of the known requirements and program changes while remaining within the authorized Total Obligation Authority. The final program provided a solid baseline for preparation of the FY91 budget.

Ammunition Integrated Modernization Plan

The first Ammunition Integrated Modernization Plan was completed and approved by the Chief of Staff of the Army in November 1989. The plan charted the course of conventional ammunition from FY 1992 through FY 2006. The plan also integrated the Research, Development, Test, and Evaluation (RDT&E); Procurement of Ammunition, Army (PAA); and Operations and Maintenance, Army (OMA) funding necessary for the total Army ammunition program. The plan was to be submitted to the Congress in December 1989.

Louisiana AAP Research Development Explosive (RDX) Facility

FY88 and FY89 funding totalling \$335 million was released to AMCCOM for the construction of the Louisiana Army Ammunition Plant RDX facility. To preclude start up problems which had been experienced with the Mississippi AAP facility, a two phase strategy was adopted, which led to a fixed price incentive fee (turnkey) contract. During Phase I, systems contractors would be selected and partially reimbursed by Army for 30 percent facility design. Phase II would have the selection of a systems contractor who would construct, proveout the facility, and train operating personnel.

Study Of Alternatives To Fund The Ammunition Production Base

The language contained in the National Defense Authorization Act for FY89 directed the Department of Defense to study maintenance of the ammunition production base and provide appropriate recommendations to ensure adequate funding. On 19 October 1988 the DCS for Ammunition was designated as the DOD Executive Agent for responding to this requirement.

The DCS's study, along with proposed response, was forwarded to the Assistant Deputy Under Secretary of Defense (Manufacturing and Industrial Programs) in mid-January 1989. It proposed that PAA industrial base funds be used to maintain the inactive base; thus reducing pressure on an already overburdened OMA account and giving more control to the activity charged with responsibility for maintaining an adequate production base. This recommendation was accepted as evidenced by Congressional language which transfers \$64.6 million from OMA to PAA to support maintenance of the inactive base in FY 90. Funding for FY91 through FY94 is: \$67.8 million (FY91), \$71.2 million (FY92), \$74.8 million (FY93), and \$78.5 million (FY94).

Base Closure and Realignment

The Defense Secretary's Committee on Base Realignment and Closure had included the Alabama Army Ammunition Plant, Jefferson Proving Ground, and a portion of Indiana Army Ammunition Plant in its list of bases to be closed. The Alabama Army Ammunition Plant was declared excess to needs by the Army and was offered to the General Services Administration (GSA) for disposal. Jefferson Proving Ground's firing range lacked sufficient space to test newer rounds, and that function would be transferred

to the Yuma Proving Ground. The portion of the Indiana Army Ammunition Plant recommended for closure was land excess to the plant needs.

Automated Analytical Tools For Ammo Program Analysis

The DCS for Ammunition, with SARDA approval, worked with the Research, Development and Acquisition Information Systems Agency (RDAISA) to upgrade and develop new automated analytical tools for ammunition program analysis. RDAISA's effort involved three modules. This modular approach allowed the analysts to use the revised and new tools as they were developed. Module I was an analysis of individual ammunition items and macro level program analysis. Module II was a "what if" analysis which displayed resulting dollar and quantity changes if various changes were made to the underlying assumptions used to build the program. Module III was the program build which was designed to build a draft program given constraints on funds, priorities, authorized acquisition objective (AAO), and current stock levels. Module I was completed in the second quarter FY90 and Module II was expected to be completed in the first quarter of FY91. No completion date had been set for Module III, which was expected to be the most difficult and time consuming part of the project.

Office Automation

During FY89 progress toward a more automated office continued. The increase in personnel strength from last year was matched by an increase in hardware, thereby maintaining approximately 7 computers for every 10 DCS for Ammunition employees.

Also, DCS for Ammunition personnel made significant strides in the understanding and use of office automation tools. Some of last years automation neophytes were now very familiar with word processing software and the use of spreadsheet, data base, telecommunications, and graphic presentation software.

Defense Standard Ammunition Computer System (DSACS)

DSACS is an automated system which satisfied the requirements of DODD 5160.65 and supported the acquisition, logistics and financial functions assigned to the Secretary of the Army as the Single Manager For Conventional Ammunition (SMCA). DSACS was initiated in 1983, and since that time some 1.5 million lines of code have been written and in excess of \$52 million dollars spent on the system. Most of the DSACS became operational in June 1988 and operational testing began on the four base acquisition modules. The testing revealed major problems in those modules and debugging and fixes were started. At the end of FY89 the system was operating, although the four acquisition modules were only partially functional. The original plan specified completion of system development by mid FY93. However, because of affordability problems, the Army decided to field a modified "bare bones" configuration by the end of FY91.

Single Integrated Ammunition Management System (SIAMS)

The goal of SIAMS was to provide ammunition managers timely and accurate data, paperless flow of information, and near real time information by integrating the Army's Ammunition Management Systems throughout the world. A functional analysis of the current wholesale and retail ammunition systems had been conducted, and a description of the systems and their interfaces had been completed. This baseline, plus proposed improvements, was being used to develop a Mission Element Needs Statement (MENS) for the project. The MENS was expected to be approved in late FY90, at which time detailed system definition and development could begin.

Committee For Ammunition Logistics Support (CALS)

The DCS for Ammunition participated in the September 1989 CALS as Vice Chair. Munitions in short supply (119) were reviewed and allocated to the Army Major Commands. The FY89 War Reserve Stocks for Allies (WRSA) received allocations to execute during the first quarter of FY90. Software had been developed by AMCCOM to update MACOM Operations Plans (OPLAN) requirements semiannually based on CALS allocations. Guidance was requested by the MACOMs from Office, DCS for Operations and Plans on Ammunition Initial Issue Quantity (AIQ). U.S. Army Europe (USAREUR) requested that some artillery munitions remain in CONUS rather than be included in the forward prepositioning of the stocks. After a USAREUR review of requirements was complete in February 1990, they might request that additional stocks remain in CONUS depot storage for USAREUR. Such storage in CONUS of Europe's stocks had not been programmed and would have an impact on depot storage facilities.

Class V Missile Logistics

During the first quarter of FY89, the DCS for Ammunition accepted the Class V Missile Logistics functions from the DCS for Supply, Maintenance and Transportation (SMT). This mission included monitoring Integrated Logistics Support (ILS); planning, developing and maintaining AMC policy covering the storage, maintenance, renovation and disposal of Class V Missile Materiel; functioning as the AMC proponent for the Guided Missile and Large Rocket Report (GMLR); and serving as the AMC representative at the Missile Distribution Plan (MIDP) Conference.

Ammunition Rationalization, Standardization, And Interoperability (RSI)

During FY89, the DCS for Ammunition assumed a more active role in the management of the Army's ammunition RSI mission. This resulted from a HQ AMC realignment of mission responsibilities to actively include the functional elements in RSI program management. In a related area, the DCS for Ammunition also actively pursued involvement in the international security assistance and direct munitions sales arenas. A new position was established at the DCS in fourth quarter of FY89 specifically to work this revised, enlarged mission area.

AMC Ammunition Review Program (AMCR 700-9)

The AMC Ammunition Review Program was presently in its seventeenth year. A total of 39 subordinate AMC installations were covered by the AMC Ammunition Review Program: AMCCOM had 19, DESCOM had 12, TECOM had 7, and MICOM had 1. The review intervals were once every three years. The FY89 review program consisted of nine reviews, three at ammunition plants (Iowa Army Ammunition Plant, Indiana Army Ammunition Plant, Lake City Army Ammunition Plant), three at depots (Tooele Army Depot, Seneca Army Depot, Letterkenny Army Depot), two at depot activities (Navajo Army Depot Activity, Pueblo Army Depot Activity), and one at a proving ground (Dugway Proving Ground). Significant problem areas noted during the FY89 program were inventory accuracy, incorrect catalog data, record keeping, incorrect storage/space reporting, physical security, and explosive safety shortcomings. The FY90 program was scheduled to consist of nine reviews and, if approved, the FY91 schedule would consist of 16 reviews.

SADARM

There was a successful firing conducted of an advanced engineering development version of the Search and Destroy Armor (SADARM) system in the fourth quarter of FY89.

Copperhead

The Army decided to terminate the 155mm Copperhead program and its follow-on, Copperhead II, in favor of the eight-NATO-nation fire-and-forget smart munition program, the Autonomous Precision Guided Munition (APGM).

155MM Area Denial Artillery Munition

The Army resolved submunition fuze production problems, thus enabling production to restart at Louisiana Army Ammunition Plant, saving the jobs of some 65 employees and allowing programming of an FY91 procurement.

The Army Mortar Master Plan

The Army Mortar Master Plan was prepared and approved by the ODCSOPS. A substantial effort was also exerted to define the costrequirement of ammunition to support a fully fielded 120mm Battalion Heavy Mortar System (BHMS).

Ammunition Management Career Program (AMCP), Civilian Career Program 33 (CP 33)

A revised Skills, Knowledge, Abilities, and Personal Characteristics (SKAP) package for careerists was developed to incorporate changes approved by the HQ AMC Functional Chief Representative (FCR), the AMCP Planning Board, and the U.S. Total Army Personnel Command (PERSCOM). Major changes were made to technical knowledge elements and optional accomplishment statements, and the overall number of AMCP elements was reduced from 64 to 51. All AMCP careerists had to submit a new SKAP packet to be referable for promotion and/or lateral transfer.

During FY89 the Ammunition Management Career Program Office (AMCPO) developed automated DA Forms for use in the SKAP packet careerists submitted to DA AMCP screening panels. These forms were intended to assist and encourage careerists to update and maintain their career profiles at the AMCPO and to foster more participation in the AMCP referral program.

The enrollment within the AMCP has increased from its initial coverage of 437 positions to its present level of 854 positions, growing by 175 positions in FY89. Current emphasis was on identifying additional AMCP positions.

With the approval of a new chapter in DOD 5160.65M, Single Manager for Conventional Ammunition (SMCA), other DOD services were able to use the AMCPO referral program to obtain ammunition trained/experienced managers for their ammunition programs. All the military services agreed to this new chapter and to participation in the DA AMCP.

During FY89, HQDA implemented an Executive Development Group (EDG) training program for Ammunition Management Career Program careerists. Six AMC careerists were selected to participate in the eight-week pilot EDG training program, which exposed selected senior level ammunition managers to work experiences in ammunition management areas outside their normal functional areas throughout the AMCP.

Office for International Cooperative Programs

Organization

The Office for International Cooperative Programs (OICP) was the focal point for international cooperative research, development and standardization programs assigned by HQDA. It served as the National Office of Record for international agreements resulting from these programs and it promulgated drafts and approved agreements to concerned activities. The office maintained records on 325 Data Exchange Agreements (DEA), 37 International Memoranda of Understanding (MOU), over 1,050 NATO standardization agreements (STANAGS) and approximately 723 ABCA (America, Britain, Canada, and Australia) quadripartite standardization agreements (QSTAGs) and Air Standards.

The OICP facilitated the identification of opportunities for international armaments cooperation and initiated actions to obtain such cooperation. Extensive coordination was performed with the Office of the Secretary of Defense (OSD), HQDA, MACOMS, AMC Major Subordinate Commands (MSCs), and TRADOC Centers and Schools. The OICP provided the organizational interface for the U.S. Army Research, Development and Standardization Groups in the United Kingdom, Germany, Canada and Australia and the AMC Representative - France.²⁷

The Deputy Commanding General for International Cooperative Programs (DCGICP) during FY89 until his retirement in September 1989 was LTG Jerry Max Bunyard, AMC's Deputy Commanding General for Research, Development and Acquisition. He was replaced shortly after the start of the next fiscal year by LTG Cianciolo. The Assistant Deputy for ICP was Mr. Bryant Dunetz.

Since the establishment of the OICP within HQ AMC in October 1987, international offices had been established within the MSC and the research, development and engineering centers (RDECs). The international offices were staffed to monitor and coordinate international activities and ensure that programs such as the Nunn Amendment, International Armaments Cooperative Opportunities Plan (IACOP), foreign technology, international seminars, and the interface with the Program Executive Officers/Program Managers (PEOs/PMs) were properly managed.

Significant Issues

A significant issues handled by the division was its support for the Army Science Board Summer Study "International Cooperation and Data Exchange to Enhance the Army's Technology Base." The HQ AMC Office for International Cooperative Programs and the HQ Laboratory Command International Programs Office provided Army support (guidance, advice, professional, editorial and clerical) for the study. The study determined how the Army could enhance its technology base through international cooperation and data exchange programs, and assessed the potential value and contribution of technical cooperation within alliances or with individual allies through cooperative research and development programs. The final report had not yet been published at the end of FY89. The recommendations would be analyzed, and implemented when feasible, in FY90.

International Cooperative Research and Development Division Activities

Army Reciprocal Visit to Japan. In June 1989 the Japan Armaments Study Team (JAST) visited U.S. Army laboratories and RD&E Centers. The JAST visit was considered successful by the Government of Japan (GOJ). Therefore, GOJ sent a letter to General Louis Wagner, CG AMC, inviting him to lead a

²⁷Unless otherwise noted, information in this section is taken from the Office of International Cooperative Programs' AHR submission for FY89.

reciprocal visit to Japan. General Wagner concurred and delegated the mission to his DCG for International Cooperative Programs, LTG Jerry Max Bunyard. LTG Bunyard led a 17 man U.S. Government/Industry team (9 government scientists from Army laboratories and Research, Development and Engineering Centers, and 6 industry representatives from the Army Science Board). This "Army Reciprocal Visit to Japan" visited GOJ government and industry labs from 17-27 January 1989. Potential areas for cooperative research and development between the U.S. and Japan are:

- * Further discussion of a U.S. test of the Japanese base-bleed projectile;
- * Evaluation of the Japanese chemical protective suit and reconnaissance vehicle;
- * Japanese interest in evaluation of the U.S. M40 mask;
- * Evaluation of the Mitsubishi diesel engine for the Japanese main battle tank;
- * Cooperation on ducted rocket propulsion systems in conjunction with the U.S. Air Force and Japan.
- * Establishment of a U.S. Army Research, Development and Standardization Group in Japan.

AR 70-41 Revision. AR 70-41, International Cooperative Research and Development, was revised based on comments received from staffing, and was submitted to HQDA in August for publication in FY90. This AR consolidated several international cooperative program regulations covering Memoranda of Understanding (MOU), Defense Data Exchange Program (DDEP), Defense Professional Exchange Program, Defense Development Sharing Program (DDSP), and the Technical Cooperation Program (TTCP).

U.S./Canada Defense Development Sharing Program (DDSP) Working Groups. U.S./Canada DDSP Working Groups at AVSCOM, CECOM, TACOM, the Natick Research, Development and Engineering Center (NRDEC) and the Armaments Research, Development and Engineering Center (ARDEC) continued to actively work with their Canadian counterparts to identify new projects. New working groups were established at MICOM and the Belvoir Research, Development and Engineering Center (BRDEC). AVSCOM's Advanced Icing Severity Level Indicating System project was terminated. The implementing contract for TACOM's new heater program project was awarded in January 1989. Significant progress was made in facilitating interchanges with USAF Working Groups.

U.S./Pakistan Cooperative Research and Development. The Government of Pakistan (GOP) followed up the AMC visit of 13 March 1988 with an extensive visit to AMC laboratories and U.S. defense contractors. The goal of this visit was to continue the momentum initiated by AMC to forge cooperative research and development projects with the U.S. Army. The first Data Exchange Agreement (DEA) on Chemical Defense was signed by the GOP and the United States in July 1989.

Tri-Service Survey in Egypt. The Tri-Service Survey of Egypt research and development facilities was to be led by AMC but was delayed twice during FY89. Plans were set for the survey to be accomplished in January 1990.

Defense Professional Exchange Program (DPEP). A major initiative was undertaken to activate the DPEP with Egypt and Pakistan to improve cooperative efforts. The DPEP was an expanded version of the International Professional (Scientists and Engineers) Exchange Program. AR 70-58, Research and Development: International Professional (Scientists and Engineers) Exchange Program, was rewritten and incorporated into chapter 4 of draft AR 70-41, International Cooperative Research and Development. The U.S. had previously signed bilateral MOUs to exchange personnel, principally scientists and engineers, with eight countries, and four more were being staffing. The DPEP with Germany and Korea remained the most

active. Germany sent groups of approximately 16 every six months, and Korea sent approximately 15 once a year.

U.S. and Israeli Research and Development Cooperation. The U.S. and Israeli research and development community continued to use the Defense Data Exchange Program (DDEP) as a significant research and development effort, and numerous actions were taken during the year to further strengthen the program. In May, the DCGICP, the Assistant Deputy for International Cooperative Programs (ADICP) and a party visited Israel for briefings on the Israeli research and development programs and for tours of their industrial complex.

A direct outcome of the visit was the preliminary effort to initiate a Tech Base Working Group (TBWG) designed along the lines of the U.S./French TBWG. The terms of reference which regulated the TBWG's activities were tentatively agreed to by both countries, and a full agreement was expected in 1990. To support the DDEP, a Data Exchange Annex (DEA) on Fuels and Lubricants was negotiated and concluded. In addition, new DEAs on Fuzes, Fire Control Systems, Biotechnology, Smoke/Obscurants, Air/Ground Surveillance Radar and electronic warfare systems, as well as amendments to several existing DEAs, were initiated.

FY89 MOUs for Cooperative Research and Development. The first Annual Report of the U.S. Army MOU for Cooperative Research and Development was published in December 1988. The report provided the status of all cooperative research and development MOU's involving the U.S. Army that were in effect during FY89. The following MOUs were signed in FY89: a U.S./Israeli MOU on helicopter flight controls and display technology was signed in November 1988, a U.S./Republic of Korea MOU on short range surface-to-air missiles guidance technology was signed on 8 August 1989, a U.S./Germany MOU on interoperability of Very High Frequency combat net radios was signed on 8 June 1989, and a U.S./French MOU on command and control automatic data processing systems for Army tactical use was signed on 13 February 1989.

International Standardization and Staff Talks Division

Interoperability Decision Support System. The American-British-Canadian-Australian (ABCA) program adopted the U.S. Interoperability Decision Support System (IDSS) system for use as the program's automation support. The U.S. Army provided the Primary Standardization Office (PSO) with the necessary computer equipment to install IDSS. This would link the ABCA National Standardization Offices to the PSO. Another standardization program, the Air Standardization Coordinating Committee (ASCC) was using the IDSS to conduct coordination as well. The potential therefore existed to share data and enhance both programs by reducing duplication effort.

Optical Laser Disk System. The prototype optical laser disk system was accepted as a viable system. Action began to acquire and install the system for use both for office automation and as an ABCA program.

ABCA TEAL XXVII. The ABCA TEAL²⁸ XXVII conference, hosted by the United States, was held at Ft. Ord, California, from 26 to 31 March 1989. The theme was "Command and Control of and ABCA Force in Low to Mid Intensity Operations". The TEAL delegations agreed on 29 recommendations to Armies and 27 program directives. The significant TEAL program directives included:

- a. Establishment of a Special Working Party to identify the means by which interoperability of combat net radios can be achieved.

²⁸Despite appearances, "TEAL" was not an acronym but rather the duck.

- b. Resolution of critical interoperability issues associated with command and control of artillery.
- c. Development of procedures and organizations for battlefield airspace control within the ABCA Force Model by March 1990.
- d. Review and identification of doctrinal and procedural differences between Armies in low and mid-level conflict. Concurrently, the first ABCA Field Training Exercise, CALTROP FORCE, was conducted at Ft. Hunter-Liggett, California. At CALTROP FORCE 102 Quadripartite Standardization Agreements (QSTAGS) were evaluated, with 50 being declared completely interoperable, 42 partially interoperable, and one nominated for cancellation. It was also determined that seven were either not suitable for evaluation at this level of exercise or could not be evaluated because required personnel/equipment or units were not available. The ABCA force deployed consisted of a 7th Infantry Division Brigade Headquarters, and one Infantry Battalion from each ABCA country. The scenario included a variety of tactical operations conducted in a low to mid-intensity environment.

National Standardization Office Support. The U.S. National Standardization Office supported the U.S. delegation and provided subject matter expertise, database contact and support, and demonstration of the Interoperability Decision Support System to the Heads of Delegation (three and two star General Officers) of the United Kingdom, Canada and Australia.

International Standardization Agreement (ISA) Assessment Plan. The division developed an ISA Assessment Plan in accordance with AR 34-1 and Draft DA Pamphlet 34-XX. The ISA Assessment Plan ensured that each ISA was useful, effective, timely, up-to-date and implemented. Each AMC ISA proponent activity used a prioritized database which would allow each ISA to be reviewed within 2 years of initial implementation or after any amendment of the ISA document.

Allied Common User Item Database. The Office of the Secretary of Defense directed the Army to establish an Allied Common User Item database with software programs to produce and maintain Common User Item Lists (CUILs) on U.S./Allied Equipment. The interoperability database was a major goal of AC/135 (Group of National Directors on Codification). The AMC Deputy Chief of Staff for Supply, Maintenance and Transportation; The Logistics Center (LOGCEN) and the Defense Logistics Agency (DLA) provided the NATO Maintenance and Supply Agency (NAMSA) with cataloging data on the M113 and the M109A2/A3 in order to develop CUILs that could be utilized by the U.S. and its NATO Allies.

MKTZ/TACCS Interface. A U.S./German Automated Data Processing (ADP) Logistics Systems Interoperability Subworking Group (SWG) was developing a systems interface between the German battlefield computer known as MKTZ and the U.S. Tactical Army Combat Service Support Computer (TACCS) systems. Germany provided AMC's DCS for Supply, Maintenance and Transportation and the LOGCEN with M109A1/A2 logistics data on diskettes to be configured for compatibility with U.S. automation systems. When completed, the final ADP product would allow U.S./German front line computers to provide interoperable logistics systems that would give both armies more valuable information on their weapon systems and supplies.

NATO Land Forces Battlefield Recovery and Repair Working Party (BRRWP). The NATO Land Forces Battlefield Recovery and Repair Working Party (BRRWP) made progress in developing their Allied Engineering Publications (AEPs) on battlefield recovery and repair. The AMC Deputy Chief of Staff for Supply, Maintenance and Transportation had designated the U.S. Army Materiel Systems Analysis Activity (AMSAA) as the U.S. Representative to the NATO Battlefield Recovery Land Repair Working Party. AMSAA had forwarded The NATO Vehicle Battlefield Recovery Handbook (AEP-13), NATO Vehicle Recovery (AEP-16) and the Battlefield Vehicle Recovery User Handbook (AEP-17) to the NATO allies for comment. AMSAA was continuing to participate in the BRRWP and to provide U.S. Army direction and support.

Refinement of the Heavy Forces Modernization (HFM) Required Operational Capabilities (ROC). In cooperation with the AMC Special Projects Office, The OICP participated in a refinement of the Heavy Forces Modernization (HFM) Required Operational Capabilities (ROC) document. This meeting, or "ROC Scrub", was held at Ft. Leavenworth, Kansas, on 1 to 3 August 1989, and was attended by representative of the Special Projects Office, OICP, TRADOC, all AMC MSCs and selected Separate Reporting Activities (SRAs). Using the International Standardization Agreements (ISA) database as the start point, over 400 ISAs were incorporated in the ROC, thus ensuring that these agreements would be considered by the materiel developers during HFM equipment design.

Rationalization, Standardization and Interoperability (RSI) Program. In March 1989 the Deputy Commanding General for International Cooperative Programs and Deputy Commanding General for Readiness directed the OICP to restructure and revitalize AMC's RSI Program. To accomplish this, management of the program was decentralized, and the AMC Headquarters Deputy Chiefs of Staff were made responsible for staff oversight of those international activities and international forums that fell under their normal staff cognizance for domestic activities. The OICP was to be responsible for overall program coordination, policy guidance, and for monitoring and reporting program progress to the AMC Command Group.

In accordance with these directions, OICP prepared a RSI policy memorandum, which was signed by the Commanding General on 8 June 1989. OICP also began a series of briefings on the RSI program to the AMC's DCSs, the Headquarters Staff, MSCs and SRAs International Points of Contact (IPOCs). In addition, the OICP scheduled an RSI Workshop for AMC personnel involved in international cooperative programs, to be held at Ft. Belvoir, VA, in October 1989. By the end of the reporting period, all DCSs and their staffs had been briefed, as had the IPOCs at TECOM, CECOM, CRDEC, BRDEC, and AMC Europe (AMCEUR).

In addition, the briefing had been presented to international activities personnel in the Office of the Joint Chiefs of Staff (J-7); the Office of the Assistant Secretary of the Army for Research, Development and Acquisition (ASARDA) and the Offices of the Deputy Chiefs of Staff for Logistics (DCSLOG) and for Operations and Plans (DCSOPS), Headquarters, Department of the Army, the U.S. Army Europe (USAREUR), the U.S. Army Training and Doctrine Command (TRADOC) and all TRADOC Liaison Officers; the European Command (EUCOM); the U.S. Army Logistics Center (LOGCEN) and the U.S. Army Combined Arms Center (CAC).

Advisory Group for Aerospace Research and Development (AGARD). The purpose of AGARD was to foster and improve the interchange of information relating to aerospace research and development among NATO countries. Nine permanent panels recommended ways for its members to use their research and development capabilities to benefit the NATO community, provide scientific and technical advice and assistance to the NATO Military Committee, stimulate advances in aerospace sciences to strengthen the common defense, and improve cooperation and collaboration among members.

Over 44 technical panel meetings were held in 1989. The panels organized numerous conferences, symposia, specialist's meetings, working groups, sub-committees, lecture series and special and short courses. In 1989, 77 publications were prepared, ranging from technical evaluation reports and advisory reports to AGARD monographs that pertained to a single, clearly defined subject, consisted of material generally agreed to be of lasting interest, and whose preparation time was often measured in years rather than months.

The Technical Cooperative Program (TTCP). The purpose of the TTCP was to acquaint participating countries (Australia, Canada, New Zealand, the United Kingdom and the United States) with military research and development programs conducted by each country and to provide a means to carry out

cooperative research and development initiatives. The program activities were managed, on behalf of the subcommittee on Non-Atomic Military Research and Development (NAMRAD), by the Washington Deputies from the five participating countries. The organization consists of 11 subgroups, technical panels, action group, ad hoc study groups and technical liaison groups. Various meetings, workshops, collaborative efforts and symposia resulted in exchanges of documents, materials, computer programs, equipment and data.²⁹ A new handbook was produced which summarized the background, aims, organizations, methods and national contact points.

Defense Research Group (DRG). The purpose of the NATO DRG was to promote cooperative research ventures relating to emerging technical concepts which might lead, in the long-term, to future equipment. The DRG consisted of 8 technical panels with 44 associated research study groups, and 3 ad hoc groups with 4 associated research study groups. In 1989, the DRG conducted various seminars, symposia and workshops in addition to the numerous exchanges that took place during the technical meetings that were generally held on a biannual basis. Numerous professional papers and scientific and technical reports were published each year.

Army International Activities General Officer Steering Committee. In August 1989, the AMC Deputy Commanding General for International Cooperative Programs hosted a meeting of the Army's international activities leadership. The meeting was on resolving responsibility for Army guidance on rationalization, standardization and interoperability in order to determine a mechanism to assist in the coordination and prioritization of Army international activities, of which standardization was a key component. It was agreed that the basic concept for an Army International Activities Plan outlined in AR 11-31 should be implemented but also supplemented by periodic meetings of this group serving as a general officer steering committee (GOSC) for international activities. The GOSC would provide overall general guidance as required, while a council of colonels from the same organizations would provide a working forum to resolve most of the issues and set the agenda for those that required GOSC attention.

International Staff Talks. The U.S./Canadian Staff Talks IV were conducted in June 1989 in Ottawa, Canada. Topics of materiel interest briefed were ammunition sustainability, cooperative research and development, logistics equipment in North American defense, and electronic warfare interoperability. Increased information exchange was agreed to in all areas.

U.S./Italian Staff Talks V were conducted in June 1989 in Florence, Italy. AMC areas of interest included command, control, communications, and intelligence (C3I); ammunition standards; and interoperability of heavy force modernization. Data and subject matter expert exchanges concerning interoperability of GroundStation Modules and airborne target acquisition systems would be pursued. Italy extended an invitation to observe field tests of the Centauro, a future wheeled combat vehicle with 105mm main armament, and the Ariete, Italy's projected future main battle tank.

U.S./Japanese Staff Talks VI were conducted in November 1989 at Ft. Monroe, VA. AMC areas of interest included the Multiple Launch Rocket System (MLRS) and warfighting logistics. AMC was exploring the possibilities for co-development with the Japan Ground Self Defense Force of an MLRS practice round.

U.S./French Staff Talks XVI were conducted in May 1989 in Draguignan, France. Topics of AMC interest were Mobile Subscriber Equipment interoperability with its French equivalent known as RITA, MLRS employment and heavy forces modernization. AMC was requested to provide information concerning the European-built MLRS capability to fire the Army-Tactical Missile system (ATACMS).

²⁹Additional details can be found in the management report for the program; however, the management report for FY89 was not due out until May 1990.

U.S./United Kingdom Staff Talks XXI were conducted in September 1989 at Colorado Springs, CO. AMC areas of interest were RSI windows of opportunity and Logistics Working Group. Both countries agreed to consider formulation of standardization and interoperability matrices. A report concerning the establishment of a logistics working group was given by the UK. It was agreed that both countries must identify points of contact for the working group.

U.S./Korean Staff Talks VI were conducted in September 1989 at Ft. Monroe, VA. AMC topics of interest included development of mine/countermine equipment and combat net radio area communications systems interoperability. Increased information exchange concerning communications interoperability would occur in the future.

U.S./Brazilian Staff Talks VI were conducted in May 1989 at Ft. Benning, GA. A topic of AMC interest was the Electronic Warfare School update by Brazil. AMC was to determine which, if any, MOU's existed with Brazil concerning exchange of electronic warfare information.

The 13th GE/U.S. Army Armaments Working Group (AAWG) was conducted in February 1989 at Ft. Bliss. The focus of the AAWG was on indirect fires; and command, control and communications (C3). The U.S./German Staff Talks number 17 were held in May 1989 at Ft. Knox. The Army Armaments Report covered the dynamics of change which drove the materiel contribution to the Air Land Battle-Future (Heavy). Cornerstones of German and U.S. materiel modernization were presented. The major cooperative armaments programs were displayed, including those under negotiation. Areas of focus were C3, common calibers and munitions, and technology sharing. Following this report, detailed briefings were given in these areas. A briefing concerning new gun technology was also given.

Foreign Materiel and Technology Division Activities

DA Pamphlet 70-XX. As a result of the International Armaments Cooperative Opportunities Plan (IACOP) Conference held in 1988 with the Program Executive Officers, Project Managers, and AMC MSCs, a handbook was developed by OICP to outline the procedures which would implement international cooperative research and development projects with U.S. allies and other friendly nations. The final version of DA Pamphlet 70-XX was provided to HQDA for staffing and publication.

Prototype Market Analysis System. The OICP initiated a prototype market analysis system to facilitate the cost effective conduct of an international market investigations after an Army requirement had been identified. OICP hosted a working group meeting with an AMC user group and finalized the data elements and system architecture. A survey of European databases and an interim report were published in November 1988. Based on user feedback, the prototype system was refined to provide a network with Defense Technical Information Center and other commercial sources such as DIALOG. It also provided a gateway through the International Decision Support System to allow on-line users to search for appropriate information to assist in creating armaments cooperation opportunities.

NATO Cooperative Research and Development/NATO Comparative Test and Foreign Weapons Evaluation Programs. AMC made a major thrust during FY89 to identify major projects to HQDA under the NATO Cooperative Research and Development, NATO Comparative Test, and Foreign Weapons Evaluation Programs. In June 1988, the OICP had hosted a joint AMC/TRADOC General Officer review that approved many new and continuing Army projects. A listing of projects current as of the end of FY89 follows:

a. NATO Cooperative Research and Development Program

Next Generation Artillery Armament Systems

Laser Stand-Off Chemical Detector
Electro-Optic Countermeasure
Lightweight 120mm Tank Main Armament Advanced
Tactical Patriot HAWK Mobility Enhancement
Electro-Thermal Gun Technology
Airborne Radar Demonstration
NATO Identification System

b. NATO Comparative Test Program

Helicopter Obstacle Avoidance System (OASYS)
ELTRO GMBH Mine Detection Radar
M1 Tank Diesel Engines
Image Intensification Night Vision Sights
Folding Float Bridge (FFB) 2000
Leguan Bridge
German NBC Fuchs Reconnaissance Vehicle CL-227
Rotary Wing Unmanned Aerial Vehicle (UAV)/ROBOT-X
Rocket Powered Target (RPT) NATO Gas Mask Canister

c. Foreign Weapons Evaluation

Trellebourg Survivable Tire System
Remotely Piloted Vehicle (RAVEN)
Reverse Osmosis Water Purification Systems
Lightweight CB Protective Garment
Ranger Anti-Armor/Anti-personnel Weapon System (RAAWS)
RAM Air Parachute System (RAPS)
Main Battle Tank Autoloader
35mm Tank Precision Gunnery Inbore Device (TPGID)
for 120mm Tank Guns
Track Tension Device
Frequency Management Facility (FMF)
Communication Aural Protective System (CAPS)
Image Transmission System (ITS)
Manpack HF Communication System
Semi-Automatic Loader for 155mm Howitzer
Improvement Program
Auxiliary Power Unit (APU) for M1A1 Tank Field
Bakery Plant Improved Chemical Agent Monitor (I-CAM)

d. Other Major Army Armaments Cooperation Projects

Autonomous Precision Guided Munition
Mobile Subscriber Equipment
Line-of-Sight, Heavy
Air Defense System (ADATS)
Squad Automatic Weapon
M119, 105mm Light Gun
Bridge Erection Boat Product Improvement
European Telephone System
German .50 Caliber, Plastic Practice Cartridge (Ball and Tracer)

Chemical Agent Monitor
Improved 81mm Mortar System
German NBC Contamination Marking Set
105mm Kinetic Energy Practice Ammunition

German and French Interpretation Support. The requirements for German and French interpretation support for Army sponsored international meetings/conferences continued to increase. AMC staff interpreters provided linguistic support during FY89 to:

NATO Allied Data Systems Interoperability Working Group
Combat Net Radio MOU Discussions
NATO AC 301 Environment Test Standardization
U.S./GE Maintenance Group
NATO Strain Gauge Working Group
Four Power Senior NATO Representative Executive Session and Technical Working Groups
Autonomous Precision Guided Munition (APGM) - Executive Management and Joint Steering Committee
MLRS - Various technical working groups and executive sessions
U.S./German Army Armaments Working Group
U.S./French Data Exchange Agreements Working Groups
NATO Electronic Warfare Working Group
HQ TECOM Test Standardization Meetings, French and German
TRADOC U.S./FR Subject Matter Expert Exchange (SMEE) on Command Posts
Future Tank Main Armament (FTMA) MOU discussions

The AMC interpreters provided translation support for international meetings and linguistically certified the foreign language versions of significant bilateral and multilateral MOUs (e.g. Future Main Tank Armament and Autonomous Precision Guided Munition) and other program documents.

International Materiel Evaluation Division

The International Materiel Evaluation (IME) Division was an operating division of the OICP located at Aberdeen Proving Ground, Maryland. The IME Division was responsible for project management of the Army portion of the OSD, Foreign Weapons Evaluation and NATO Comparative Test Programs. These programs allowed the Army to identify items, primarily end items, through market investigations in friendly foreign nations that had a good potential to satisfy U.S. requirements.

Office of the Deputy Chief of Staff for Procurement

Organization and Personnel

The position of Deputy Chief of Staff for Procurement, which had been vacant since the start of the fiscal year, was filled by BG Nicholas R. Hurst on 3 January 1989.³⁰

On 10 April 1989, a reorganization of the DCS was implemented. It had been previously approved by General Wagner but held in abeyance until the departure of the DCS's Assistant Deputy Chief of Staff (ADCS) for Procurement Operations, LTC(P) Willie Frazier, Jr. The reorganization resulted in the

³⁰Unless otherwise noted, information for this section is taken from the DCS for Procurement AHR submission for FY89.

dissolution of the ADCS for Procurement Operations. That ADCS's Automatic Data Processing and Central Procurement functions were consolidated into a new division, the Support and Analysis Division (AMCPP-PS), under the ADCS for Procurement Policy and Analysis. The review and analysis workload function and one GS-14 position were also transferred to the new Support and Analysis Division from the Contract Administration/MS (Major Subordinate Command) Support Division of the ADCS for Procurement Policy and Analysis.

The balance of the ADCS for Procurement Operations migrated to other parts of the DCS for Procurement. The career program function was incorporated with the Competition Management Office and the Administration Office became a separate office reporting directly to the DCS's Executive Officer.

A number of manpower changes in the Contract Administration/MS Support Division, including the loss of TDA positions and long-term assignments outside of AMC had resulted in the loss since January 1988 of 6 civilian and 1 military position despite a increase in workload.

Significant Issues

Significant issues handled by the DCS, in addition to its reorganization, included increased oversight of AMC contract administration offices, on-site Contract Management Reviews (CMRs) at a number of AMC installations, Secure Environment Contracting, an effort to reduce Procurement Administrative Lead Time, the Rapid Acquisition of Spare Parts Pilot program, the pilot Contractor Information System, the HQ AMC's Acquisition Tracking Center, and insuring competition both for AMC's procurement in general and in the AMC Spare Parts Program. These and other topics are discussed below.

Oversight of Contract Administration Offices

On 7 October 1988, General Wagner approved a plan which had been prepared by the DCS for Procurement for corrective action and increased oversight of all AMC contract administration offices (CAOs). The plan had been prepared at General Wagner's direction as a result of deficiencies noted in the August 1988 Special Contract Management Review (SCMR) of AVSCOM and its Army Plant Representative Offices (ARPROs).³¹ The contract administration offices covered by the plan included three ARPROs under AVSCOM, twotank plants under TACOM, 14 active ammunition plants under AMCCOM, and two other government-owned contractor-operated facilities³².

As a result of this decision, a Contract Administration Oversight Committee responsible for oversight of the CAOs was established. It consisted of a centralized dedicated team of functional specialists located within the Deputy Chief of Staff for Procurement. They monitored to completion (resolution or implementation) recommendations resulting from the SCMR and the independent contract administration review conducted by LTG Donald M. Babers (RET.), a former AMC Deputy Commanding General for Materiel Readiness.

To strengthen the headquarters' oversight role in contract management, key functional analysts within the Headquarters were identified for information flow and for determination of AMC position on functional issues.

³¹MEMORANDUM FOR RECORD, SUBJECT: Contract Administration Action Plan, 14 October 1988, included in DCS for Procurement FY89 AHR submission.

³²Briefing package, Contract Management Review Action Plan, 4 Oct 88, in DCS for Procurement AHR submission for FY89.

A number of actions were taken to development and promulgate AMC policies, procedures, and guidance pertaining to contract administration. A contract administration handbook was drafted and forwarded to the contract administration offices for their review and comment, with a target publication date of January 1990. In March 1989, the first AMC Contract Administration Conference was conducted in Gettysburg, PA, where representatives from all 21 contract administration offices attended the three-day conference.

Onsite Contract Management Reviews

Onsite CMRs were conducted in accordance with DOD Directive 5126.34, Acquisition Management Review Program, and the DOD Manual for Review of Contracting and Contract Management Organizations. The CMRs were conducted at Mainz Army Depot, Detroit and Lima Army Tank Plants, and at AMCCOM. Follow-up reviews to the original SCMR were also conducted at AVSCOM and the ARPROs at Bell, Boeing and McDonnell Douglas.

Results of the CMRs conducted at the various CAOs indicated that most of the contract administration functions were being performed in an adequate manner and that the responsible MSCs were providing some form of oversight. Recommendations were provided to each activity and the activities were monitored for compliance and implementation. Follow-up reviews at AVSCOM and each of the ARPROs revealed significant improvement in the overall performance of functions and in the execution of oversight responsibility.

Secure Environment Contracting (SEC)

In February 1988, personnel of the U.S. Army Contracting Support Agency performed a procurement management review (PMR) of Secure Environment Contracting (SEC) at Headquarters AMC, that is, of procurement actions which were classified. Their report stated that "HQ AMC needed to initiate a concentrated effort to improve management of the SEC process. While there had been some recent actions towards improvement, an impetus was needed to insure that a capability was fully established." The report also noted that reviews of the MSCs conducted from October 1985 through December 1987 had found only one to have a complete SEC capability in place, while several of the others had no SEC capability at all, and that several security violations had been noted while the reviews were in progress. General Wagner's comment on this 3 March 1988 report was that "I want a plan and timetable to get this straight by 18 Nov 88."³³

A timetable for a variety of corrections actions, including changes to regulations, establishing a firm policy on AMC's role in SEC, and establishing a SEC oversight review capability and program within AMC, was developed. This was approved by General Wagner on 23 March 1988 with the comment "I want this

³³MEMORANDUM FOR COMMANDER, U.S. ARMY MATERIEL COMMAND, ATTN: AMCCS, 5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333, SUBJECT: Procurement Management Review of Secure Environment Contracting (SEC) at HQ U. S. Army Materiel Command, 3 Mar 88, and marginalia on same, in DCS for Procurement AHR submission for FY89.

tracked & monthly updates until fixed.³⁴ By the start of FY89 most of the corrective actions were at or near completion, and a schedule for FY89 inspections of all SEC activities had been prepared.³⁵

The DCS devoted significant effort during FY89 to implementing the corrective actions. A full-time SEC focal point within the Deputy Chief of Staff for Procurement was designated. SEC reviews were performed at all SEC facilities in order to assess the overall effectiveness and efficiency of SEC contracting management at the subordinate activities, the capability of each MSC to execute and provide oversight of its SEC responsibilities, and to provide advice and assistance on related contracting matters. The recommendations made by the SEC reviews were monitored until they were implemented.

Reduction of Procurement Acquisition Lead Time Study

The Office of the Secretary of Defense (OSD) sponsored an Acquisition Lead Time (ALT) Study in an effort to reduce Procurement Acquisition Lead Time (PALT). As a participant in the study, the DCS provided statistical data as well as information about the methodologies used for tracking ALT/PALT at the six commodity commands. By the end of the fiscal year OSD had not published the results of their study.

A representative from DCS also participated in the joint DOD and Aerospace Industries PALT Panel. The goal of this panel was to develop strategies and initiatives with industry counterparts to help reduce the PALT. This panel continued to meet, and its final report was not expected until February 1990.

Rapid Acquisition of Spare Parts (RASP)

AMC, at the direction of General Wagner, participated in a demonstration project with the U.S. Navy for state-of-the-art Computer Integrated Manufacturing (CIM) of small mechanical parts. This Navy program utilized the newly developing Product Data Exchange Specification industry standard as the cornerstone of its CIM effort to minimize the response time and costs for spare parts manufacturing. The Navy had developed this program in its capacity of lead service for the Rapid Acquisition of Spare Parts panel established by the Joint Policy Coordinating Group for Logistics Research, Development Test and Evaluation.³⁶ When this program became fully operational, it was expected to reduce the overall production lead time from the current 300 to 400 days to an average of 30 to 40 days.

AMC participated in this project in order to determine the desirability of transferring this technology to Army facilities, and it provided \$260,000 to fund the demonstration program. In order to test the Navy process, AMC Major Subordinate Commands that were National Inventory Control Points were tasked on 18 October 1988 to identify Level III Technical Data Packages (TDP) for the project. Primary selection consideration was given to Diminished manufacturing source items (obsolete parts with anticipated replenishment requirements) and parts for which no known source existed. Of the 165 TDPs submitted in FY89, 35 were selected for the demonstration project. The RASP demonstration projects were scheduled

³⁴MEMORANDUM FOR COMMANDER, SUBJECT: Procurement Management Review of Secure Environment Contracting (SEC) at HQ, U.S. Army Materiel Command (AMC), 18 March 1988, and marginalia on same, included in DCS for Procurement AHR submission for FY89.

³⁵MEMORANDUM FOR COMMANDER, SUBJECT: Procurement Management Review of Secure Environment Contracting (SEC) at HQ, U.S. Army Materiel Command, 6 Oct 88, in the DCS for Procurement FY89 AHR submission.

³⁶MEMORANDUM FOR DISTRIBUTION, SUBJECT: Rapid Acquisition of Spare Parts, 18 October 88, in DCS for Procurement AHR submission for FY89.

for completion in the first quarter of FY91. Several DESCOM activities (Sacramento, Letterkenny, and Anniston Army Depots) and two AMCCOM arsenals, Rock Island and Watervliet, expressed interest in having RASP facilities at their sites.

Contractor Information System (CIS)

CIS was the AMC pilot program for assessing contractor performance. The database was loaded with contract information from the MSCs for the period from FY86 through FY88. Each MSC submitted either hard copy information (data sheets) or contract information via electronic means for FY89 and FY90 contracts over \$500,000. Each MSC also identified two solicitations of over \$4.5 million as test projects for this program.

As these solicitations were received, the MSC's requested from AMC's DCS for Procurement the contractor performance data on their offerors via the Performance Risk Assessment Group (PRAG). When these data request were received, the DCS collected performance information on these offerors from other commands. The CIS database was then updated, and the performance assessments were forwarded to the requesting PRAG, which reviewed and evaluated this data independent of the solicitation technical review. The PRAG then submitted a report to the Source Selection Authority (SSA) for the acquisition.³⁷

Acquisition Tracking Center (ATC)

HQ AMC's Acquisition Tracking Center became fully operational during the fiscal year. All of AMC's major subordinate commands' ATCs were linked and transmitted data electronically to the DCS for Procurement's mini-computers. They tracked ten key acquisition milestones for procurement actions over \$3 million for each MSC. All the work necessary for the automated data transmission, storage, and processing of this information was completed as was the programming, documentation, and instructions for downloading data from the MSCs. Also, the operating instructions and procedures for analyzing the data and providing a monthly analysis to the Deputy Commanding General for Materiel Readiness were completed. Because of differences in the automation systems used at the MSCs, the data was updated from the MSCs on varying time schedules. AVSCOM performed a weekly update, CECOM and TROSCOM biweekly updates, and MICOM and TACOM monthly updates.

Dollar Amount Competed

AMC competed 49.9 percent of all the dollars it awarded during FY89. This was the highest competition performance ever achieved by AMC and it exceeded the FY89 goal of 47 percent. This was six percentage points better than the FY88 performance, and was an increase of \$2.3 billion competed. Based on AMC's FY89 competition performance, AMC reduced the cost of the goods and services it procured by an estimated \$369 million. In addition, all but three of the MSCs (AMCCOM, TACOM, and TROSCOM) met their individual FY89 goals.

AMC's Spare Parts Program, which was also managed by the DCS's Competition Management Office, accrued over \$179 million in net savings during FY89. The largest portions of the savings came from value engineering programs, but significant savings were also achieved by reverse engineering spare parts to create technical data packages which could be used to compete the parts, by breaking out spare parts so that they could be purchased separately rather than as part of a package from the prime contractor, and

³⁷For further efforts to improve the use of historical data on contractor performance in the source selection process, see page 11.

by obtaining three refunds which together totalled almost \$47K. Of the \$2.3B dollars awarded for spare parts, \$1.1B or 48 percent were competed. This was a decline from the 54 percent competed in FY88.³⁸

Early in FY89 the Army Acquisition Executive sent a memorandum to all Program Executive Officers (PEO) in which he stressed the need for them to work with and support the program of the competition advocates and competition management offices. He noted that the Competition Advocate General of the Army reported to him, and stated:

Although Competition Advocates and Competition Management Offices are organizationally placed under, and report to the Commanders or Heads of Contracting activities, their responsibilities and authority extend to PEO organizations as well. It is therefore essential that a cooperative working relationship exist between the two organizations. PEOs must ensure that the data required for four-year and annual competition plans as well as data required for the quarterly reports are complete and provided on a timely basis. PEOs and Program Managers must also involve Competition Advocates in acquisition strategy sessions and appropriate review boards in the initial phases of strategy formulation. No acquisition plans should be formulated without Competition Advocate coordination.³⁹

Standard Army Automated Contracting System (SAACONS)

SAACONS was a headquarters Department of the Army (HQDA) directed and approved Standard Army Management Information System (STAMIS), which had been developed to provide an Army-wide standard automated contracting system. Within AMC, 35 activities were scheduled to automate their installation contracting mission with SAACONS.

At the start of FY89, 16 AMC activities had implemented and started production utilizing SAACONS. During FY89, 17 additional AMC sites went into production, including all of the Major Subordinate Commands base operation mission. LABCOM implemented SAACONS during October 1989.

An automated interface (AMC SAACONS Interface) between SAACONS and the AMC Standard Installation Level Systems for Supply and Finance, developed and programmed during FY88, was completed, tested, and approved in FY89. After extensive prototype test use at Letterkenny Army Depot and MICOM, by the start of FY90 it was fully implemented at each AMC activity that used the AMC Standard Installation Level Systems, with the exception of Sacramento Army Depot (SAAD) which delayed fielding due to a support agreement with Hawthorne Army Ammunition Plant. SAAD was given approval to implement the interface in December 1989.

The Army Procurement Automation Council (APAC) was established by the Department of the Army to act as the configuration control board for enhancements to SAACONS. The Army Procurement Research Office (APRO) in Petersburg, VA, was the SAACONS functional proponent and chaired the APAC. HQ AMC was represented on the APAC by the DCS for Procurement, and it was in attendance at meetings in October 1988 and in March and July 1989.

The primary APAC issue was the development of requirements for SAACONS Version 3. A data call was sent to all AMC SAACONS field activities in March 1989, requesting user input for proposed enhancement to SAACONS. Responses were consolidated and forwarded to APRO. These

³⁸Briefing Package, AMC Spare Parts Program, in the DCS for Procurement AHR submission for FY89.

³⁹ARMY ACQUISITION EXECUTIVE MEMORANDUM 89-1, SUBJECT: Competition - The Shared Responsibility, in the DCS for Procurement AHR Submission for FY89.

recommendations, as well as proposed changes recommended by other Army MACOMs, were reviewed, approved, and prioritized for inclusion into what evolved into the SAACONS version 3 functional description. This document, however, was subject to further review at the next APAC meeting scheduled to take place from 30 January to 1 February 1990.

The AMC SAACONS/AMC SAACONS Interface Functional Coordinating Group (FCG) was chartered pursuant to AMC-R 15-23. Announcement of the formation of this FCG and of the organizational meeting of FCG members was sent to the field on 1 September 1989. The first meeting of the AMC SAACONS/AMC SAACONS Interface FCG was held from 17 to 19 October 1989 at the Systems Integration Management Agency (SIMA) in St. Louis MO. Proposed SAACONS enhancements recommended at this meeting would be presented to the APAC at its next meeting.

Commodity Command Standard System (CCSS)

CCSS was an AMC automated integrated business system designed to accomplish all stock control, supply management, physical inventory, financial management, procurement management, cataloging, maintenance management, and provisioning functions. The system was one of the world's largest integrated business system with over 450 subsystems and 1,900 separate programs. AMC, through CCSS, supported the Army's total force including the active duty Army, Army National Guard, and Army Reserve, in addition to the sister services and our allies.

CCSS had been fully extended to all six AMC major subordinate commodity commands in 1977. Major changes had occurred since then as new missions and functions were brought under the automation umbrella of CCSS. In FY89 a variety of accomplishments were made to improve the CCSS system, including the following.

A new Procurement Contractor Identification File (PCIF) was developed and fielded. It provided for the establishment and maintenance of an address file for non-government entities doing business with the government.

The new Integrated Procurement System (IPS) had a functional sizing effort initiated to validate equipment capabilities, and a draft configuration management plan for it was produced. A draft Design Guidance and Planning Factors document was completed, and a contract for the design of IPS was awarded. The draft system's Decision Paper for Milestone II was completed. In preparation for post-Milestone II developments, work began on exploration of contractual alternatives. All design contract deliverables were received, and the final design prototype was completed.

Pre-IPS processes were installed at AMCCOM for environmental field testing. The new work, current work, and suspense screens were being tested to determine operational feasibility. Additionally, a capability for Pre-IPS query (providing the entire Materiel Acquisition and Delivery [MAD] File on the Sperry relational database) was also being tested to determine feasibility of production processing.

Functional analysts completed the design changes to be made to the Procurement Automated Manpower Utilization and Projection System (PAMUPS) process, and the redesign of PAMUPS was programmed and fielded.

Procurement personnel at the MSCs were provided additional Procurement Automated Data and Document System (PADDS) printer flexibility, and funding and installation dates were identified for full production printers.

The IPS PEO contracted for the acquisition of on-line Federal Acquisition Regulations (FAR), with installation anticipated to take place in the first quarter of 1990.

Phase IV of the Materiel Acquisition and Requirements Validation System (MARVS) was completed, which was the culmination of a very successful project. The total project changed the daily way of doing business in the procurement community by developing the capability of creating Procurement Work Directives (PWDs) and PWD amendments on line.

Central Procurement Activities Program

The DCS for Procurement was responsible for management of the Central Procurement Activities (PE 721113) Program, which was funded by the OMA Appropriation and which primarily supported pay and related costs for personnel in the Procurement 1100 series, quality assurance specialists, engineers, attorneys, and other support personnel who accomplished worldwide the three major functions of procurement operations, contract administration, and quality assurance. Central Procurement also supported three 3 Army Plant Representative Offices, 28 ammunition plants, Mainz Depot, and DESCOM Support Activity Far East (DSAFE).

Acquisition of all materials, supplies, equipment, and services, including research and development acquisition, were contingent upon the services of the procurement offices which served numerous customers. Overall management of the procurement function placed continuous emphasis on meeting obligation funding goals/plans for the Army Procurement Appropriation, Army Stock Fund, and more than 50% of Research, Development, and Acquisition Appropriation. Less than adequate Central Procurement performance would impact the quality of contractual instruments and result in higher costs, lower quality of delivered materials, delayed deliveries, and increases in protests and appeals.

FY89 AMC OMA Appropriation funding constraints resulted in submission of an unexecutable Central Procurement (PE721113) Program to DA in its July 1988 Budget Program Resource Review (BPRR). The funded guidance to DA for PE721113 was \$248M. After learning of the PE721113 shortfall, HQ AMC budget analysts obtained an increase of \$273M for Central Procurement in the 1 January 1989 Program Budget Guidance (PBG). The fiscal year ended with PE721113 having an actual obligation of \$275.7M through additional reprogramming by the MSCs. The PE721113 authorization for civilian manpower spaces was 7,495 as of the March 1989 PBG. It had an actual onboard civilian manpower strength of 7,483 on 30 September 1989. Although actual onboard strength was thus only 12 below what was authorized at the end of the fiscal year, the fiscal year's average was 7,431, or 64 under authorization, because of personnel actions caused by the P7S dollar shortfalls, such as hiring freezes and controlled hiring. The FY89 workload accomplishment included 106.2K Procurement Actions (PAs) accomplished, with an ending backlog of 35.7K PAs and a \$17.264 obligation dollar value of procurement actions accomplished.

The outlook for the future continued to show declining resources. Central Procurement Civilian manpower authorizations had been reduced more than 700 spaces to near FY83 level (7,375 excluding Indirect Hire Foreign Nationals [IDHFNs]). Continuing efforts were being made by HQ AMC (Force Development), with the AMC Management Engineering Activity (AMCMEA), DCS Procurement, and the field to develop a Manpower Staffing Standard System (MS-3) for predicting manpower requirements. This was especially important because continuing resource constraints more than ever would require the need to better articulate, justify, and defend requirements. Initiatives such as the Army Management Review (AMR)/Defense Management Review (DMR) were also underway to realign, consolidate, and/or streamline the acquisition process in order to obtain efficiencies and cost savings. When and if all were approved and implemented, it would mean drastic changes in how DCS Procurement and Central Procurement Activities Program would do business in the future.

Value Engineering (VE) Program

In October 1988, HQDA requested information on the Army's progress in settling Value Engineering Change Proposals (VECPs) for FY86 through FY88. Based on data collected from each MSC by the DCS for Procurement, problems were identified in the VECP settlement process. An increase in VECP settlement times was noted. Problems were attributed to a lack of communication between Procurement and Value Engineering Offices, training of Procurement personnel in processing VECPs, and, in some cases, command emphasis on the VE Program.

In response to these problems a Procurement/Production Joint Action Plan was implemented. MSC Procurement VE Points of Contact (POCs) were established and those POCs attended the AMC Quarterly VE Video Conference. Each MSC developed its own initiatives for reducing settlement times. Team support continued to be emphasized by the AMC Headquarters. This coordinated effort promoted a positive attitude towards the VE Program and resulted in a decrease in the number of overaged VECPs.

Past Performance in Source Selection

In January 1988, the AMC Commander established a task group to study the use of past performance in source selection. The group was jointly chaired by the DCS for Procurement and the Chief Counsel. Membership included representatives from legal, procurement, product assurance, production, and the Vint Hill Farms Station procurement directorate. During 1988, the group sketched out model procedures and a preliminary database, which set the stage for Vint Hill's actual use of the trial methodology in two buys ("Phase I"). The tests demonstrated that a thorough evaluation of an offeror's past performance significantly enhanced the government's confidence level in the offeror's ability to perform contract requirements. The personnel who participated in the source selections at Vint Hill strongly endorsed the program. Based on this success, Phase II of the trial implementation was authorized by GEN Wagner.

Phase II consisted of two test solicitations at each Major Subordinate Command. Each of these solicitations included, in section L, a request for past performance information from the offeror and a brief description of the evaluation methodology in section M, both based on model provisions developed during Phase I. An isolated Performance Risk Analysis Group (PRAG) would evaluate the performance portions of the proposal using information from the DCS's Contractor Information System.

Phase II would be completed when each of the test cases was awarded, projected to be early in 1990. Each PRAG would submit an after-action report containing their assessment of the methodology and the procedures. These, combined with similar reports from each of the working group members, would determine the future of the program.

Business Clearance

Business Clearance was the process of assuring that a planned acquisition had been adequately prepared, conformed with public law and regulation, and demonstrated sound business judgement. It presented for the official record a proposed contract's statement of work, type, price/cost analysis, special clauses, and terms and conditions. It also included a brief summary of events leading to the proposed contract and a documented negotiation objective in a Business Clearance Memorandum (BCM).

Business Clearance by the MSCs was required on each individual procurement over \$500,000. HQ AMC's previous role as approving authority on acquisitions over \$500,000 was reduced by the evolution of the Program Executive Officer concept and acquisition streamlining to participating role and oversight over the clearance. HQ AMC recommended objectives and means to the MSC Commander or Head of Contracting Activity. The DCS for Procurement felt that while some of these recommendations had been accepted and resulted in benefits to the Army; others had not been accepted, to the Army's detriment.

HQ AMC had started performing business clearances of acquisitions by Army Plant Representative Offices (ARPROs) of over \$1,000,000 following management reviews at those offices which had found significant problems. Deficiencies in negotiation preparation and the absence of negotiated forward pricing rate agreements created the necessity of performing these review until sufficient discipline was installed in the system to assure fair and reasonable contract prices.

During FY89, the DCS participated in Business Clearances of sole source negotiated contracts to the following extent:

Table III-1
Business Clearances of Sole Source Negotiated Contracts

MSC	Contract Quantity	Proposed Value(K\$)
AMCCOM	17	\$1,695,506.7
AVSCOM	8	2,047,671.9
ARPROs	12	85,034.4
CECOM	5	316,940.4
LABCOM	2	89,754.6
MICOM	9	1,845,229.8
TACOM	8	1,481,768.5
TECOM	1	17,035.2
TROSCOM	2	58,938.
Total	64	\$7,638,879.5

Source: Historical Submission, DCS for Procurement, FY89.

Additional business clearance activity included reviews of proposed forward pricing rate agreements between the ARPROs and their respective contractors, reviews of competitive source selections, and participation as functional representative to source selection advisory councils.

Independent Research and Development/Bid and Proposal Negotiations

The DCS for Procurement's Cost/Pricing Policy Division was the Army's focal point for the negotiations of Advance Agreements for Independent Research and Development/Bid and Proposal (IR&D/B&P) Costs for 22 contractors. The Services (Army, Navy, and Air Force) were required by law to negotiate advance agreements with contractors that had IR&D/B&P expenditures of over \$4.4 million in a fiscal year. Five contracting officers conducted these negotiations for the Army. In FY89, they concluded 45 business ceilings covering 45 business segments of the 22 contractors, with the total amount negotiated being \$585,659,000.

Defense Acquisition Review (DAR) Committees

The Cost/Pricing Policy Division sat on several DAR Committees: Contract Finance Committee, Pricing Committee, and Cost Principles Committee. These committees implemented acquisition regulations in response to laws passed by Congress, and promulgate Government acquisition policy.

Office of Small and Disadvantaged Business Utilization (OSADBU)

Significant Issues

Among the most significant issues dealt with by the office was the outreach program, "Blue Chip" manufacturing firms, Public Law 99-661, Historical Black Colleges and Universities and Minority Institutions, National Industries for the Blind and National Industries for the Severely Handicapped, procurement conference support, and a DA-sponsored visit to Puerto Rico.⁴⁰ The command group continued to express interest in the Small and Disadvantaged Business Utilization Program by issuing several letters of support for the program throughout the year.

Outreach Program

The Small and Disadvantaged Business Utilization Office experienced an outstanding year of reaching out to the small business community. Over 2,100 Outreach letters, containing the AMC Pamphlet *How to do Business with AMC*, were mailed to small and disadvantaged business firms in an effort to increase the participation of small businesses in AMC's acquisition program. In addition, visits and telephone calls to AMCSB by commercial business concerns to receive advice and counseling continued to increase.

"Blue Chip" Manufacturing Firms

DA SADBUD completed an assessment of 47 "Blue Chip" Manufacturing Firms to participate in the acquisition process at AMC subordinate activities. AMCSB provided this list of Blue Chip manufacturers to each subordinate activity, with a request that action be taken to place these manufacturing concerns on their bidder's list. Additionally, specific instruction was given that information concerning these Blue Chip Manufacturers would be exchanged between the activities.

Public Law 99-661

Personnel of the AMCSB remained active in the implementation of the 1988 Public Law 99-661, the major provision of which was a requirement that DOD award at least five percent of its procurement budget to small disadvantaged business firms and institutions. Considerable effort continued in FY89, as it had in FY88, to provide guidance to AMC's subordinate activities by both telephone and letters of instruction.

Historical Black Colleges and Universities and Minority Institutions (HBCUs/MIs)

The office conceived of a video teleconference on Historical Black Colleges and Universities and minority institutions (HBCUs/MIs) and then developed and chaired such a teleconference. This teleconference permitted the subordinate activities, HQ AMC and DA SADBUD to share experiences, discuss regulations and explore opportunities in a conference setting. By using a teleconference rather than a standard conference, it was possible to avoid TDY costs and also to record the conference so that it could be shared with personnel who were unable to attend.

⁴⁰Unless otherwise note, the data for this section is taken from the Office of Small and Disadvantaged Business Utilization AHR submission for FY89.

National Industries for the Blind (NIB) and National Industries for the Severely Handicapped (NISH)

The office continued its active involvement in support of the National Industries for the Blind (NIB) and National Industries for the Severely Handicapped (NISH) by providing a representative to attend the annual meetings of both groups. In addition, informational material was distributed, and several letters explaining these programs and requesting support for them were sent to the AMC subordinate activities.

Procurement Conference Support

During FY89 the office participated in numerous procurement-oriented conferences. The support generated as a result of the AMC participation served to develop additional procurement sources, strengthen the competitive posture at a nominal cost, and improved the image of AMC and the Army to both Congress and the private sector.

Puerto Rico

As requested by the DA SADB, AMC led a team to Puerto Rico. The purpose of the team visit was to increase contract awards to small and disadvantaged business firms in Puerto Rico, which would also assist the Department of the Army in achieving the statutory goal of having five percent of its procurement budget used by small and disadvantaged businesses, increase the industrial production base, and decrease unemployment in Puerto Rico.

New Small Business Laws

Passage of Public Law 100-656 required DOD to participate in small business competitiveness demonstration program testing. The program would be conducted over a period of four years, commencing 1 January 1989, and would apply to contract solicitations for the procurement of services in construction, refuse systems, architectural and engineering (A&E), and non-nuclear ship repair.

Statistics

FY89 DA Statistics were not available due to both contractual and systemic problems in maintaining the DA Data Base. Therefore, there is no official statistical data to report for the Small and Disadvantaged Business Utilization Office for FY89.

Office of the Deputy Chief of Staff for Production

Organization and Manpower

At the start of FY89 the DCS was authorized 71 civilians and 6 military spaces, for a total of 77 spaces. At the end of the fiscal year this had increased to 76 civilian and 6 military spaces, for a total of 82 authorized spaces. The additional five spaces had been transferred in April 1989 from the Laboratory Command (LABCOM) in conjunction with the transfer of responsibility for the AMC Materials and Parts Availability Control (MPAC) Program. The DCS head throughout the year was Darold L. Griffin. Also unchanged throughout the year was the DCS's organizational structure.⁴¹

⁴¹Unless otherwise noted, the information from this section was taken from the DCS for Production submission for the FY89 AHR.

Significant Issues

The most significant issues handled by the DCS in FY89 included the Detroit Arsenal Tank Plant study, the Hughes Aircraft Corporation corrective action program, on-time delivery calculation methodology, and input into the Defense Management Review (DMR).

Detroit Arsenal Tank Plant Study

The 2 December 1988 decisions by the Defense Acquisition Board to produce Abrams tanks at the rate of 516 per year, to layaway the Detroit Arsenal Tank Plant (DATP), and to procure the M1A2, resulted in an update of the 1987 Economic Analysis study on M1 Tank Plant Operations. The study readdressed the cost and impact of closing the DATP and reassessed the analysis of the minimum sustaining rate for M1A1 and M1A2 production. The study's initial results were briefed to the AMC Commander and forwarded to the Under Secretary of the Army on 31 March 1989, and the detailed DATP closure plan was provided to the Under Secretary of the Army on 20 October 1989. The study's findings were that the minimum sustaining rates would remain the same for M1A1 and M1A2 production, that the Government would realize a savings of \$16M to \$20M million per year over a 7-year period, and that plant closure would cost approximately \$112M. If the closure was approved by Congress, completion of the closure would be scheduled for 1 September 1993.

Hughes Aircraft Corporation Corrective Action Program

In March 1986, HQ AMC and Hughes Aircraft Corporation had entered into a Memorandum of Agreement (MOA), the terms of which were intended to improve Hughes' performance on several Army contracts including the Position Locating and Reporting System (PLRS), Firefinder, and the Tube-Launched, Optically Tracked, Wire Command-Link (2) Sub System (TOW 2 SS). The MOA provided for monthly on-site reviews, teleconferences, and the implementation of 175 specific corrective actions. TOW 2 SS and Firefinder regained contract schedule in 1988 and were removed from all terms and conditions of the MOA. The PLRS program continued to experience difficulties but steady progress was made during 1989. In response to this progress, the CG, AMC completely released the PLRS and Hughes Aircraft from all provisions of the MOA.⁴² This action officially closed all actions relating to the MOA.

On-Time Delivery Calculation Methodology

The Joint Logistics Commanders (JLC) chartered an ad hoc working group to produce a DOD-wide methodology for calculating on-time delivery rates for contracted goods. The DCS participated together with representatives from the Navy, Marines, Air Force, and Defense Logistics Agency to develop the new standard method of calculation. In April 1989, a methodology proposed by the Army was adopted by the group and subsequently approved by the JLC. It was to be initially tested in the AMC MSCs from July to December 1989. The test was underway, and data for the fourth quarter of FY89 was collected and available for analysis.

Complete success with the new methodology was dependent upon a computer calculation program that was being developed by MICOM. The computer program had not yet been successfully demonstrated, so initial data collection had been a manual effort. The computer program was provided to all the MSCs following the fourth quarter of FY89, and should be used to perform the calculations before the end of the test period. The reports for the period from July to December 1989 were made on a monthly rather than

⁴²Ltr, GEN Wagner to Dr. Malcolm Currie, 31 July 89.

quarterly basis and were made using both the old and the new methodology to determine if the changes in on-time delivery were due to the change in methodology or to changes in the actual delivery of items.⁴³

Defense Management Review (DMR)

The DCS participated in the development of the U.S. Army Materiel Command Report, which was a response to the Defense Management Review. The portion of the Army response prepared by the Deputy Chief of Staff for Production, dated August 1989, was entitled "Achieving Excellence in the Defense Industry Through Acquisition Process and Management Improvements." This portion of the report concluded that a 3 billion dollar savings (FY91-95) could be realized without changes in public law, and that a 6 billion dollar savings could be achieved with some major changes in public law and current acquisition practices. The strategy employed in the study was that of Total Quality Management (TQM).

In all these elements the strategy relies on a commitment to Total Quality Management (TQM). It requires continuous improvement to management and industrial processes which can be measured and translated to hard dollar savings. The hardware investment and maintenance accounts can then be stabilized as the Army is able to buy and maintain the same quantity for less funding.⁴⁴

Heavy Force Modernization

Heavy Force Modernization (HFM) was a direct descendent of the Armored Family of Vehicles (AFV) program. Budget constraints on fielding vehicles in unit sets in accord with the AFV concept resulted in an HFM plan focused on six vehicle systems designated as "first to fight." These systems continued to be based on common chassis and modularity. The six were the Block III Tank, Combat Mobility Vehicle, Line of Sight Anti-Tank, Fighting Infantry Vehicle, Advanced Field Artillery System, and Future Armored Rearm Vehicle. In March of 1989, a Program Executive Officer, PEO-HFM, was appointed to manage the program, including current tank systems as well as future programs. The DCS for Production wrote the Production Readiness Master Plan (PRMP) for the Milestone I decision in second quarter of FY90. These initial hardware and system contractors would move the HFM program forward.

AMC Bonding Improvement Initiative

In 1989, the AMC Bonding Improvement Initiative continued to make gains in the areas of communication, nondestructive testing, and research. In communication, the Armament Research Development and Engineering Center conducted workshops at CECOM and Letterkenny Army Depot; conducted a formal class on adhesive bonding; and expanded the adhesive database for use by DOD and its contractors. In nondestructive testing, the Materials Technology Laboratory (MTL) was investigating systems using ultrasonic technology to quantify bond strength in composite structures. In adhesive research, MTL developed new adhesive formulations; investigated the durability of adhesive bonded joints; developed an adhesive molecular modeling technique for problem investigations; and developed a field repair kit for damaged composite structures utilizing ultra-violet radiation to cure the structures.

⁴³MEMORANDUM FOR DISTRIBUTION, SUBJECT: Reporting On-Time Delivery, 1 August 89.

⁴⁴AMC Report, Achieving Excellence in the Defense Industry through Acquisition Process and Management Improvements, Aug 1989, p. 1.

Revitalization of the Army Depots for the Year 2000 (READY 2000)

To address the full range of modernization requirements necessary for the depot system to adequately meet the future needs of the Army, a comprehensive modernization program was initiated. Through the Revitalization of the Army Depots for the Year 2000 (READY 2000), facilities and equipment as well as management systems would be upgraded to meet the needs of the Army into the 21st century. A program of this magnitude required an integrated, top-down planning approach to ensure its success. In July 1989, the READY 2000 Master Plan was published by the Depot System Command. It established and initiated a comprehensive four-phased plan covering the direction, planning, design, and implementation of the program which was to culminate in Fiscal Year 2000.

Tracking of Materiel Using Microchips

Recent technological advances in miniature solid state electronic devices made it possible to store and transmit information on individual items by using a microchip attached directly to that item. The microchip was encoded with information which could be read or updated by a reading device that did not make physical contact with the microchip. Such technology was already being used to identify the contents of large shipping containers being moved into and out of storage areas and to provide information on the options being assembled into individual automobiles on production lines.

There were many areas within the Army where this technology could improve readiness, save resources, provide more accurate inventories, and track critical assets. One of these projects under study was to mark hazardous material with a "microcircuit technology in logistics applications" (MITLA) device which would carry shipping, handling, storage, and emergency care information. This information would reside with the item at all times and be easily accessible throughout the logistics pipeline. Other areas which would benefit from MITLA were the Army medical functions and Depot maintenance (serialized control).

Red River Army Depot (RRAD), the Center of Technical Excellence for depots, was planning a conference for all Army Depots to review RRAD's successes in using the microchip technology. These successes provided timely and efficient data collection (early reporting of missing and salvage items), elimination of manual data entry (reduced paperwork), increased storage accuracy, and automated end item tracking of part shortages by vehicle. Once the other depots reviewed what had been done at RRAD, then they might better understand their requirements for future applications. RRAD's economic analysis of four projects for FY90 funding was being validated. This analysis would also include the currently installed maintenance tracking systems using microchips.

Materiel Integrating Data System (MIDS) Review

After transitioning MIDS from the U.S. Army Laboratory Command in April 1989, DCS personnel worked with the MIDS contractor, Innovative Technology Inc. (ITI), to adapt MIDS to the Army/Air Force Joint Tactical Fusion Program (JTTF) as a tool to work JTTFs specific logistics problems in fielding the All Sources Analysis System (ASAS) and related equipment. In addition to existing problem-solving modules within MIDS, the JTTF office wanted to expand MIDS by adding modules to permit on-line access to their Logistics Support Analysis Record (LSAR) data, automated provisioning, an improved interface to the Army's Selected Essential-Item for Availability Method (SESAME) data, on-line access to engineering drawings, and an automated cataloging capability.

As a result of these expanded capabilities, the MIDS acronym was changed from Materials and Parts Availability Control (MPAC) Information Data System to the Materiel Integrating Data System (MIDS). Thus expanded, MIDS was installed at the JTTF office on 8 August 1989, following an on-line presentation by DCS Production and ITI personnel on 25 July 1989 to representatives from the JTTF office, DOD, HQ

DA, HQ AMC, and DLA. The on-line MIDS consisted of a single NEC 286 Personal Computer that acted as a PC workstation linked to a 386 super microcomputer acting as the network/gateway concentrator.

The system was electronically linked to three Government databases: the Commodity Command Standard System (CCSS) at two location (CECOM & TACOM), the Army Master Data File (AMDF), and the End Item Application File (EIA). On-line access to a commercial data service called the Technical Logistics Reference Network provided Federal Supply Catalog data to MIDS, as well as Procurement History and Dunn & Bradstreet data. MIDS accessed JTFP LSAR data from a database that was located at a LTFP contractor's facility called Mantech. Mantech had links to Propulsion Laboratory, Martin Marietta-Denver, and Ford Aerospace. An on-line Automated Cataloging module, and a View Engineering Drawings module had also been provided on MIDS. The JTFP/MIDS was presented at the Integrated Logistics Support (ILS) conference to Army PMs and PEOs at Ft. Lee, VA.

Contractors Requiring Special Attention (CRSA) Activities

The CRSA program underwent a major review in preparation for the revision of AMC Circular 70-3, *Research, Development, and Acquisition: CONTRACTORS REQUIRING SPECIAL ATTENTION (CRSA) PROGRAM*. The revision also served the purpose of incorporating MSC experience into an improved program. During the year, the Command Counsel provided a boost to the program by initiating a Pilot Debarment Program in two MSCs (TACOM and MICOM) where contractors, identified by the CRSA program, who did not improve their performance would be processed for debarment in order to prevent the award of additional contracts to those who were known to be poor performers. TACOM was selected for the program because as the originator of the CSRA program it had the most experience with it, while MICOM was selected because it already had a contractor it had recommended for debarment.⁴⁵ The objective of the program was:

to ensure that those contractors who flagrantly and consistently abrogate their contractual duties are removed from the acquisition system. Although we do not envision a large volume of these cases, those that we do prosecute under this project will ease some of the administrative burden created by chronic non-performers. This project will send a message to those few contractors who do not accept their responsibilities that AMC will not tolerate contractor non-performance.⁴⁶

In the course of FY89, the Army Audit Agency performed a quality review of several MSCs and identified the CRSA program as potentially the most effective quality enforcement tool across the Command for use in the MSCs to make the contractor more accountable for the quality of contracted items.

Materials and Parts Availability Control (MPAC) Program

In April 1989, the MPAC function and personnel were transferred from LABCOM to AMCPD. The major concern of MPAC was diminishing manufacturing sources and material shortages (DMSMS). From April through September, the MPAC office responded to a total of 121 DMSMS alerts initiated by the Defense Electronics Supply Center (DESC). Of the 121 alerts, 12 were courtesy alerts for Army Managed Items (TACOM, AMCCOM, MICOM, and CECOM) representing 27 electronics items going out of production. The other 109 alerts represented 1,173 DESC-managed items. Further breakdown of the 109 alerts for DESC-managed items showed that 63 had known or potential Army system use that affected 977 items. The MPAC office was investigating policy/procedures that needed to be implemented to address

⁴⁵ AMC, Command Counsel's Legal Program Poor Performers Debarment Project, p. 1.

⁴⁶MEMORANDUM THRU Deputy Commanding General for Materiel Readiness for Commander, SUBJECT: Poor Performers Debarment Project, 29 Mar 89.

Army-managed DMSMS items. This would include soliciting notices from semi-conductor manufacturers, quantifying life-of-type buys, and developing specialized long-term storage facilities. The MPAC office was also trying to reduce the total DMSMS workload in the MSCs by developing the MIDS (discussed above), and was in the process of revising the MPAC regulation, AMC-R 5-23.

Contractor Information Systems (CIS)

In August 1988, the DCS for Production agreed with the DCS for Procurement to take on the task of developing a personal computer software program for a database known as Contractor Information System (CIS). The database would provide information on contractor's past performances in contracts of over \$500,000, based upon the DD350 forms completed by contracting agencies. Phase I software was completed April 1989 and distributed to 18 AMC Major Contracting Offices in May 1989. The Phase II evaluation was underway and would be completed in January 1990. In Phase II, each MSC would provide FY89 contract data to AMC for inclusion in the AMC database and would apply the CIS procedures to two major procurements. The CIS system had data on over 3,000 contractors and 10,000 FY86-89 Army contracts. Coordination between the DCS for Production, The AMC Command Counsel, The Defense Logistics Agency, CECOM, and Vint Hills Farm, was very good on this project. The target date for implementation of Phase III follow-on was early CY90.

Production Review Integration Database System Review

In June 1988, AMCPD reviewed the existing Production Review Integration Database (PRIDE) and PRIDE-PC (Personal Computer) systems. Martin Marietta Energy Systems, through a contract with the Department of Energy, was tasked to identify and quantify the PRIDE strengths and weaknesses, compare PRIDE with similar existing systems, identify options, and provide recommendations. As a result of this study and of the costs of operating PRIDE, a decision was made to discontinue use of the PRIDE mainframe version. In August 1989, AMCPD started a revision of the PRIDE-PC version to enhance its operational capability and user friendliness. All work was then placed on hold due to a budgetary change for FY90. PRIDE-PC was redistributed to the MSCs for their use in October 1989. In November 1989, an Information Management Plan was submitted covering the PRIDE system. Following resolution of the budget problems, AMCPD was to continue to update/revise the PRIDE-PC system.

Production Acquisition Improvement Review (AIR)

Production AIRs were in-depth reviews to help MSCs, PEOs, PMs, and higher headquarters identify productivity problems, propose solutions, evaluate the extent of contractor Total Quality Management involvement, and recommend specific contractor and government corrective actions. The reviews were normally a one to two week intensive team assessment of the functional areas of Production/Manufacturing, Quality Assurance, Software Engineering, and Management. Since 1985, 37 AIRs had been conducted. During FY89, 8 AIRs were conducted in support of HQDA, AMC, and PEO/PM elements. As a means to further export this program support tool to each MSC, a draft AIR circular was prepared and circulated, with responses expected by December 1989. It was anticipated that 10 to 12 AIRs would be accomplished during FY90.

Metric Transition Task 5 (Specification and Standards)

AMCPD was designated as the Army Office of Collateral Responsibility for Metric Transition Task 5 (Specifications and Standards). This required the Army to convert to the metric system, to the maximum extent economically feasible, by the end of FY92 in accordance with Public Law 94-168 as amended by Public Law 100-418. The initial survey of measurement sensitive documents was completed during FY89, and plans for conversion were developed. This action would be tracked as part of the Standardization

Improvement Working Group activity, and the metrication accomplishments and activities would be included in the FY89 report to Congress on metrication.

Technical Data/Configuration Management System (TD/CMS)

The Technical Data/Configuration Management System effort was refocused due to advances in technological capabilities. The approach, approved by the October 1987 AMSRC, included two phases. Phase 1 was to establish a common baseline at all sites using a relational database management system. This phase was designated as TD/CMS Enhanced (E). Phase 2 involved a complete redesign of TD/CMS, designated as TD/CMS Redesign, to include enhancements and then-current technologies. The prototype TD/CMS (E) system was installed at TACOM, and three other systems were installed at AVSCOM, MICOM, and the Belvoir Research, Development, and Engineering Center.

Digital Storage and Retrieval of Engineering Data System (DSREDS)

The DSREDS program was successfully installed with the final system acceptance at Belvoir Research, Development, and Engineering Center in January 1989. Remaining to be accomplished was a system change to bring it into compliance with Computer-Aided Acquisition and Logistic Support (CALS) standards which had been adopted after DSREDS was developed and fielded. Additional plans were being formulated for DSREDS expansion in order to provide DSREDS capability at the maintenance depots, and for a total system upgrade in the FY94-95 timeframe.

Program Management Risk Reduction Roadmaps

Pre-publication distribution of AMC-P 70-22, *Program Management Risk Reduction Roadmaps*, was made in June 1989. The Roadmaps Pamphlet was the Army Materiel Command's implementation of DOD 4245.7-M, Transition From Development to Production. It was intended to help program managers "make maximum use of resources and avoid costly, often disastrous surprises in the acquisition process" by giving them a source which integrated the "myriad of directives and the latest acquisition initiatives, tempered with time-tested engineering and management disciplines (lessons learned)."⁴⁷

Engineers and Scientists Non-Construction Army Civilian Training, Education, and Development Plan

AMCPD was engaged in the Engineers and Scientists Non-Construction Working Group which had finalized the Department of the Army Engineers and Scientists (E&S) Non-Construction (NC) Army Civilian Training, Education, and Development System (ACTEDS) Plan. The E&S NC ACTEDS Plan was approved by AMC's Deputy Commanding General for Research, Development, and Acquisition and was forwarded to the U.S. Army Personnel Command for final approval and publication.

The plan included eight subcareer programs: research, systems development engineering, production engineering, quality/product assurance engineering, test and evaluation engineering, logistics engineering, operations research systems analysis, and software engineering. It included DA civilians from 53 different occupations series, ranging from clothing design and geography to statistics, computer science, and research laboratory mechanic, the latter the only wage grade series covered by the program.⁴⁸

⁴⁷Draft of Program Management Risk Reduction Roadmaps, p. 1-1.

⁴⁸Army Civilian Training, Education and Development System Plan (ACTEDS): Engineers and Scientists (Non-Construction) Civilian Career Program, pp. 1-2.

Additionally, AMCPD was in the process of enhancing the Industrial Specialist Intern and Career Development Program.

Standardization Improvement Working Group

In March 1989, the Army Departmental Standardization Office (AMCPD-SE) initiated action to form a Standardization Improvement Working Group (SIWG) for the purpose of identifying those specifications and standards assigned to Army Preparing Activities which needed revision and/or updating. This had been initiated by a report from Dr. R. B. Costello, the Under Secretary of Defense (Acquisition), on "Enhancing Defense Standardization."

In order to be more responsive to current and future acquisition needs, restore credibility to our existing specifications and standards, and generally revitalize the Defense Standardization Program, there are six broadareas in which action is required: (1) establishing accountability with the Military Departments and Agencies for achieving program objectives; (2) conducting a comprehensive review of all specifications and standards to ensure they are in compliance with current Department of Defense policies; (3) establishing closer relationships with non-Government standards bodies and industry; (4) automating standardization data bases that serve as tools in the development, storage, retrieval, dissemination, application, and analysis for specifications and standards; (5) designating an executive agent to program and budget for the special standardization projects; and (6) promoting expanded training for the developers and users of specifications and standards to effect the necessary cultural change. Taking action in these areas will correct persistent problems, ensure these problems do not recur, and will allow us to seize new opportunities to perform our mission more effectively.⁴⁹

An AMCPD memorandum, dated 1 June 1989, transmitted the Army SIWG Charter to commanders of major subordinate commands. The review was consolidated into the ongoing Regulatory Relief Task Force Work Group (WG9), Specifications and Standards. The later required the review of all specifications and standards no later than December 1990.

Production Planning Schedule (PPS) Contracts/Memorandum of Understanding (MOU)

The Army was testing a new approach to industrial preparedness planning. The Industrial Mobilization Division of the DCS for Production was conducting the test, which had two parts: DD Form 1519 Test and Production Planning Schedule (PPS) Contracts/MOU. The DD Form 1519 Test (Industrial Preparedness Program Production Capacity Survey) was a data collection form.

The PPS Contracts/MOU was the commitment document. The Office of Management and Budget (OMB) approved the DD Form 1519 TEST on 13 April 1989. The Army was to test the form for a one-year period, during which it would be used to collect mobilization data at each MSC. The test results would be evaluated by the Defense Logistics Agency and by AMC's DCS for Production. The DCS was working with the Office of the Secretary of Defense (OSD and the other services towards the goal of having one DD Form 1519 for all the services.

The PPS Contracts/MOU was the contractor's commitment document. The MOU was merely an understanding between the contractor and the government that in time of emergency the contractor would produce the item. There were two types of PPS contracts: no-cost and cost type. Both contractually obligated the contractor to produce. The PPS Contracts/MOU was endorsed by the DOD Deputy Under Secretary (Industrial and International Programs). They received Defense Acquisition Regulation (DAR)

⁴⁹Report to the Secretary of Defense by the Under Secretary of Defense (Acquisition), Enhancing Defense Standardization: Specifications and Standards: Cornerstones of Quality, Nov 1988.

Council approval in October 1989. The DCS for Production had a key role in ensuring that procurement instructions were issued to the field. The implementation instructions for the industrial preparedness planners were being written and it was anticipated that the three-year test would begin not later than 1 January 1990.

Office of the Deputy Chief of Staff for Product Assurance and Testing

Organization and Manpower

The DCS for Product Assurance and Testing (AMCPA&T, also known as AMCQA) was authorized 41 civilian and two military spaces throughout FY89. The DCS, which was headed by Seymour J. Lorber, consisted of three divisions: Product Quality Division, Engineering Division; and System Evaluation and Testing Division, the latter with a separate Evaluation Branch and Test Policy Branch.⁵⁰

Significant Issues and Accomplishments

Resource Constraints. As in the past several years, the most significant issue faced by the DCS was the accomplishment of an increased workload with a decreased workforce and severe budget constraints.

Significant Accomplishments. Significant accomplishments during the fiscal year included the expansion of the Contractor Performance Certification Program and the publication of regulatory guidance for it; the incorporation of corrosion prevention control into design, training and maintenance procedures; progress in improving the materiel release function; improvements to the Deficiency Reporting System; publication and distribution of MIL-STD-2000 (Military Standard 2000), *Standard Requirements for Soldering Electrical and Electronic Assemblies*; increased savings and improved quality as a result of the implementation of statistical process control; and the start of the development of DA Pamphlet 702-3, which was to include the Reliability, Availability and Maintainability philosophy.⁵¹

Command Management Issues

Army Warranty Program. Major Subordinate Command videoconference laydowns on the warranty program were completed in FY89. The laydowns identified areas that the MSCs thought needed discussion, including their performance of Cost Benefit Analysis, tailoring warranty coverage, and providing information to the user. As a result of the laydowns, plans were made for a Warranty Working Group meeting early in the first quarter of FY90.

Work continued on the development of warranty guidance for repair and spare parts. The revision of the AR 700-139, *Army Warranty Program Concepts and Policies*, and the AMC supplement thereto was continued with an expected completion date in the first quarter of FY90.

Materiel Release Program. Significant accomplishments were made in FY89 in the materiel release program. Progress was made in revising AR 700-142, *Materiel Release, Fielding, and Transfer*. Recommendations that had been made by MSC materiel release coordinators in the second quarter of FY89

⁵⁰Unless otherwise noted, information for this section is taken from the AMCQA AHR submission for FY89.

⁵¹Further details on these programs are given below.

for improvements to the materiel release program were staffed with the MSCs and the Program Executive Officers (PEO), and their recommendations in turn were also incorporated into the draft. These recommendations were also reviewed from a test and evaluation perspective by representatives from AMC, the Army Materiel Systems Analysis Activity (AMSAA), AMC's Test and Evaluation Command (TECOM), the Operational Test and Evaluation Agency (OTEA), and the HQDA Office of the Deputy Chief of Staff for Logistics (ODCSLOG). They also provided recommended changes and additions.

A draft of the regulation was staffed within AMC in July 1989 and the final draft was then forwarded to AMC's DCS for Supply, Maintenance and Transportation for inclusion in the next revision of AR 700-142. When implemented, the proposed changes would significantly reduce the supporting documentation required for a materiel release and would also reduce the preparation and staffing time required for each materiel release package.

Another significant accomplishment in FY89 was the completion of the process of obtaining the individual MSC materiel release forecasts and in entering get well data into the Acquisition Milestone Management System (AMMS) database maintained by the Materiel Readiness Support Activity (MRSA). The effort to obtain these forecasts and to enter the data into a database had originated in a first quarter of FY88 request by the DCS for Product Assurance and Testing that MRSA review existing databases to determine the most cost effective way of eliminating the use of hard copy in reporting materiel release get well data. MRSA had recommended the use of its AMMS, with the addition of a module for specific materiel release get well narratives and completion dates. The input and output formats were presented to the MSC materiel release coordinators in the second quarter of FY89 and, with minor changes, were accepted. The MSC input of get well data to AMMS began during the first quarter of FY89, with all the MSC's completing their input by the fourth quarter of FY89. As a result, the hard copy requirement was being eliminated.

The AMCQA materiel release package tracking database was also revised and updated to refine the existing report, design additional reports, and incorporate additional fields in the database structure. The DCS reviewed, resolved issues involving, and staffed for approval by the CG, AMC a total of 56 materiel releases. Of the 56, 52 were conditional releases, one was a training release, and three were full releases.

TABLE III-2
Materiel Releases

System Name/Mode	Type Release
FAASV-Field Artillery AMMO Support Vehicle	Conditional
SEE-RO48, Small Emplacement Excavator	Conditional
HMMWV-2nd, GP2, 3989	Conditional
AN/TRC-17A(V)3, Countermeasures Set, Special Purpose	Conditional
AN?TRC-170(V)3 and (V)2	Conditional
Multiple Launcher Rocket System (MLRS)	Conditional
Guardrail, Common Sensor (GR/CS) System 3, AN/USD-9B	Conditional
AN/MSQ-103B, Lightweight Teampack, Receiving Set	Conditional
Mobile Subscriber Equipment	Conditional
Patriot, Backfill of 2/7 ADA	Conditional
EH-60A CM Helicopter	Conditional
PRC-90-2, Radio	Conditional
Patriot, C2/C3 Conversion	Conditional
DGM Stand-Alones, Digital Group Multiplexer	Conditional
M2A2/M3A2, Bradley Fighting Vehicle System	Training
Sincgars (USARSO)	Conditional

Sincgars (TRADOC)	Conditional
DGM Assemblages	Conditional
M1A1, Abrams Tank System	Full
MCS, AN/UYQ-43(V)1/2 Maneuver Control System (MCS NDI)	Conditional
AN/TLQ-17A(V)3	Conditional
Trailblazer, AN/TSQ-138	Conditional
M1015A1 Shelter Carrier	Conditional
AN/TSC-85A and AN/TSC-93A, Satellite Commo Terminals	Conditional
AN/UAS-12C Night Sight Equipment	Conditional
Chaparral M48A3 Air Defense	Conditional
MSE	Conditional
TACJAM, AN/MLQ, Countermeasures Set, Special Purpose	Conditional
PMS Stinger	Conditional
BFVS, M2A2/M3A2	Conditional
ROWPU, 600 GPH Water Purification Unit, Revere Osmosis	Conditional
ESSS/ERFS, External Stores Support System & Extended Range	Conditional
AN/UYO-30 and AN/UYO-30 Tactical Computer Terminal (TC)	Conditional
AHIP/OH-58D	Conditional
M1/IPM1 Abrams Tank System	Full
BGU, AN/GYK-33, Basic Generating Unit	Conditional
ROWPU, 600 GPH	Conditional
Sincgars Ground Version	Conditional
Night Sight, AN/USA-12A	Conditional
BGU, AN/GYK-33, Basic Generating Unit	Conditional
Truck, 5-Ton, M939A2 (less M940A2 Wrecker and M944A2 Van)	Full
HAWK	Conditional
APC, M113A3 WAK (Without Armored Kit)	Conditional
TCJAM, AN/MLQ-34, Countermeasures Set, Special Purpose	Conditional
MSE	Conditional
AN/TSQ-138 Trailblazer, Master Contrpl Sets	Conditional
MSE to III and V Corps Units	Conditional
M9 Armored Combat Earthmover (ACE)	Conditional
MLRS for the Netherlands	Conditional
FAASV, Field Artillery Ammunition Support Vehicle	Conditional
PATRIOT	Conditional
An/USA-12A Night Sight	Conditional
HAWK	Conditional
AN/TSQ-138, Trailblazer, Master Control Sets	Conditional
Modular Printing System, Modules B & C	Conditional

Source: DCS for Product Assurance and Testing Historical Submission, FY89.

Post Fielded Review. AMCQA had the lead in developing a process and regulation to consolidate the six existing Post Fielding Reviews into one review. The CG sent a letter to the Training and Doctrine Command which provided an action plan to effect the consolidation and the MSCs were provided with an update and interim guidance pending the development of a new regulation on Post Fielded Reviews.

Fielded System Reviews (FSR). Plans to update DARCOM-R 702-13, *Fielded System Reviews*, were cancelled due to the planned consolidation of the Post Fielded Reviews. "Post Fielding Reviews" is a generic term that refers to six separate reviews that take place after a system is fielded. Efforts were being made to consolidate the six reviews into a single review. The 10 FSRS held in FY89 were:

TABLE III-3
Fielded System Reviews

MSC	System
TROSCOM	Compact Air Conditioners Topographic Support System
TACOM	M915 Truck
AMCCOM	Remote Target System Target Holding Mechanism
CECOM	AN/TLQ-17A Special Purpose Communication Sets AN/USM-410 and AN/MSM-103 Test and Repair Facilities AN/PSL-3 and AN/VSC-7 Single Channel Manpack System
MICOM	AN/TSQ-73 MLRS

Source: DCS for Product Assurance and Testing Historical Submission, FY89.

AMC Circular 702-2, *Fielded System Review Program 5-Year Schedule FY90-94/System Operational Readiness Review, FY90*, was updated and published on 30 September 1989.

Contractor Performance Certification Program ([CP]²). The (CP)² program implemented a strategy that was:

used to help assure that quality goods and services are acquired in a cost effective manner by the U.S. AMC. This strategy emphasizes the need for coordinated quality and production management planning early in the acquisition cycle by the procuring activity, the Contract Administration Services (CAS) and its contractors. First, contract quality, engineering, and production performance requirements are established and accomplished. Secondly, by voluntary consent, the contractor is certified. As a result, the level of government oversight at that facility can be reviewed for reallocation of resources. The (CP)² recognizes those contractors that consistently delivery quality products, provide evidence of process control, employ preventative/proactive audit procedures, and demonstrate aggressive and continuous efforts to improve quality and productivity.⁵²

Two contractors were certified under the (CP)² program in FY89: AM General of Mishawaka, IN, in March 1989 by TACOM and Aerojet Ordnance of Downey, CA, in June 1989 by AMCCOM. In addition, two other companies signed Memorandums of Agreement/Letters of Intent to participate in the program in FY89: General Dynamics at the Detroit Arsenal Tank Plan with TACOM and Martin Marietta of Orlando, Florida, with AMCCOM and MICOM. The (CP)² program recognized contractors who consistently delivered quality products, controlled their processes, employed proactive audit procedures, and

⁵²AMC-R 702-9, *Contractor Performance Certification Program (CP)²*, 5 Feb 1990, para 1.

demonstrated aggressive and continuous improvement efforts. Under (CP)², senior management officials from the MSCs work cooperatively with contractors, PEOs, and Defense Contract Management Command's in-plant quality assurance staff to reduce process variability and improve overall quality and performance.

The Army Audit Agency (AAA) started an audit of TACOM's (CP)² program on 15 May 1989. The tentative findings, which dealt with incentives, government furnished equipment, contractor selection criteria, and post-certification performance tracking, were briefed to TACOM in September 1989.

AMC-R 702-9, *Contractor Performance Certification Program (CP)²*, had been revised and distributed for staffing on 31 May 1989. Final revision, however, had been held up in order to incorporate the above AAA audit findings, as applicable.

A (CP)² flag was designed by The Institute of Heraldry and manufactured by the Defense Personnel Supply Center during FY89.

Deficiency Reporting Program. The deficiency reporting program underwent a significant change in orientation in FY89. Instead of being primarily a collection of data for the MSCs to use in their day-to-day assessment of the quality of Army materiel, it became a way to provide the soldier in the field with the best possible equipment by providing quick and accurate solutions to any problems the soldiers might have with that equipment.

In order to provide that quick service to the soldier, an effort was made to simplify the form used to report deficiencies. The form for quality deficiency reports (QDR) was SF-368, but a coordinated AMC, TRADOC, FORSCOM effort developed AMC Form 2818 (Customer Feedback Form) which was tested in selected Army units from November 1988 to June 1989. One of the primary features of the new form was that all field generated reports using it were sent to one Central Receiving Point, thereby allowing the form to have a preprinted address on it which eliminated the need for the soldier in the field to research publications to determine which MSC it should be sent to. The test was a success, and after minor changes the form was to become a DA form. It was anticipated that it would be introduced into the Army on a systematic post by post basis, with electronic submission used wherever feasible. In addition, the other Services were considering making it a DOD form to replace the SF-368.

In addition to the electronic transmission of the test form, DESCOM depots were also now sending all of their deficiency reports via e-mail. This use of e-mail was expanded so that DLA could use it instead of the SF-368 required by regulation. The revised joint service regulation on deficiency reported recommended electronic transmission as the preferred means of correspondence on all matters related to deficiencies. Its use saved the 5-10 days lost in the mail rooms when the SF-368 was used, and had a significant impact on the overall processing time of deficiency reports. AMCQA was working on standardizing the transmission format so that data could be input directly into the MSC Deficiency Reporting System without the need to reenter the data. Several field sites were also using e-mail for the QDR submission, and plans were underway to expand their capability to do so on a case-by-case basis, starting with those installations that generated the greatest number of QDRs.

Another effort to reduce QDR processing time had the DESCOM depots submit their QDRs directly to DLA rather than an MSC when the item was DLA-managed. This reduced processing time by over 30 days and, following a complete review of this procedure, DLA and AMC agreed to make it their standard procedure. The joint service regulation was revised to permit it, and DLA was in the process of expanding this procedure to the other services.

Soldering. The DOD Soldering Certificate Board had a number of accomplishments in FY89. It provided guidance to the Soldering Training/Certification Facilities on developing the 24-hour conversion course from the previous standards to MIL-STD-2000 document requirements and it provided guidance and

approval to them in developing the 80-hour MIL-STD-2000 training course. It also provided the Soldering Training/Certification Facilities with instructions on the use of the existing Generic Training Plan for the contractors' use in their conversion training. It distributed the draft MIL-STD-2000 Generic Training Plan for review and comments by soldering trainers and approved the Army's proposal to establish a sixth Soldering Training/Certification Facility in Europe. It also adopted S-46 training, a program with specific requirements for Defense Contract Administration Services (DCAS) in the Defense Logistics Agency, as the common curriculum for MIL-STD-2000.

MIL-STD-2000 Soldering Technical working groups discussed and resolved concerns raised by the training and technical requirements imposed by MIL-STD-2000. The working groups identified 66 issues in MIL-STD-2000 that required some change in the document. When completed, the results of these working groups would become part of the revised version of MIL-STD-2000. The working group trainers agreed to cross visits of staff personnel to each training facility.

Critical Safety Item Program. A Critical Safety Item Program (CSIP) had been in effect in AMC since its establishment in January 1986 by AMC-R 702-32, *Critical Item Safety Program*. Critical items were defined as "a part, assembly, installation, or production system with one or more critical characteristics that, if not conforming to the design data or quality requirements, would result in an unsafe condition."⁵³ Since then the MSCs had continued to identify, validate, update technical documents, and control Critical Safety Items (CSI) through the system's entire life cycle activities. An addition to the program was made by Section 805, Title XIII of the National Defense Authorization Act of 1989, *Procurement of Critical Aircraft and Ship Spare Parts*, which went into effect on 1 April 1989. It required the military to take action to ensure that qualification and contractual quality requirements were specified and made available to perspective offerors. On 10 May 1989 AMCQA gave the Office of the Assistant Secretary of the Army evidence of AMC's compliance with that requirement.

In June and July 1989 a coordinated review of the CSIPs of the MSCs and of 2 Army plants was performed in order to assess compliance with AMC-R 702-32 and to provide assistance where needed. At the end of the fiscal year the final report was still being reviewed. A lack of funding and the failure to complete the CSIP Army Regulation were continuing concerns.

Statistical Process Control. Statistical process control within AMC involved the use of statistically valid methodology and techniques to regulate the quality of products during manufacture. The benefits of the program included quality enhancements, yield improvements, process optimization, and cost reduction.

The Army Management Engineering College curriculum was expanded to include additional courses on Statistical Process Control (SPC) and quality improvement techniques. MSCs continued to enhance employment to SPC on many weapon system contracts (more than 600) at in house facilities.

Other Significant Issues

Environmental Stress Screening Tri-Service Guidebook. The Army, Navy, and Air Force combined their efforts in order to try to prepare an Environmental Stress Screening (ESS) tri-service guidebook since they shared a common concern over the issue. In the past the services had each had their own implementation policy, which had resulted in some conflicts and in confusion for companies which produced equipment or systems for multi-service use. This had led to increased acquisition costs for the government through an inefficient use of ESS stimulation equipment, increased configuration control efforts, and more complex logistics systems. The new guidebook would result in consistency in interpretation and

⁵³AMC-R 702-32, *Critical Item Safety Program*, 28 Jan 86, para 4c.

implementation of ESS programs across DOD elements. At the end of the year its first draft was being circulated for comment.

AR 702-3, Army Materiel Systems Reliability, Availability, and Maintainability. AMC, TRADOC and SARDA recognized the need to revise the current Army Regulation on Reliability, Availability, and Maintainability (RAM) in order to provide a clear and concise RAM policy that supported current Army concepts. As a result, AR 702-3 was being revised so that it would contain only RAM policy. RAM philosophy and methodology was being removed to a supporting DA Pamphlet 702-3. RAM policy was being expanded in order to encourage continuous RAM improvements throughout the acquisition process and to incorporate RAM into the design and production process through concurrent engineering. Reliability requirements were being expanded to cover the entire system, both hardware and software. In addition, an assessment of the potential operating and support cost impacts of various proposed concepts was added.

Army Corrosion Prevention and Control (CPC) Program. DA had asked AMC to prepare an Army Regulation that established policies, responsibilities, and procedures to be used to minimize the corrosion of Army equipment. The resulting AR 750-59, *Army Corrosion Prevention Control Program*, was implemented on 25 August 1988. It stressed consideration of corrosion/materiel deterioration as part of the primary design criteria for all systems and equipment, with particular importance in the design phase attached to the selection of materials, components configuration, and coating systems, especially in those areas not accessible for regular maintenance.

CPC programs at the MSCs continued to trace CPC issues on existing equipment and to implement contractual language to incorporate CPC as part of the design process. They also incorporated CPC into training and maintenance procedures. Although AMCCOM, TROSCOM, and CECOM had presented CPG prebriefs to the DCS, only TROSCOM had presented a CPC Functional Process Review to LTG Bunyard, the Deputy Commanding General for Research, Development, and Acquisition. The functional process reviews were then suspended, and the CPC Action Officers Workshop was instead used to provide command guidance on CPC.

A V Corps corrosion survey conducted from 17 July to 18 August 1989 was conducted under revised survey procedures, and as a result a number of new action items were generated. In addition, cost data was collected in order to help determine the potential cost savings resulting from corrosion prevention design improvements. A cost avoidance of over one million dollars was anticipated in just one aviation system from planned corrosion prevention improvements.

Office of the Project Manager for Training Devices (PM TRADE)

Organization and Manpower

At the start of the fiscal year PM TRADE was authorized 26 officers, 4 enlisted personnel, and 197 civilians. At the end of the fiscal year the authorizations for military personnel was unchanged and the authorization for civilian personnel had increased by eight to 205. Six of the eight additions had been the result of a 1986 manpower survey, while the other two additions were for positions dedicated to foreign military sales. Throughout the fiscal year the PM was COL Richard J. Lunsford, Jr.⁵⁴

In November 1989 the names of a number of subordinate product management offices were changed and their missions and functions were realigned in order to more closely align them with TRADOC schools

⁵⁴Unless otherwise noted, this section is based upon the PM, TRADE AHR submission for FY89.

and to redistribute the workload. Thus the Product Manager for Armor Devices became the Product Manager for Close Combat Training Systems, the Product Manager for Aviation Devices became the Air Combat Training Systems, the Product Manager for Ground System Devices became the Product Manager for Combat Support Training Systems, and the Product Manager for Combat Training Centers became the Product Manager for Combined Arms Training Systems and Combat Training Centers.

Contractor Logistics Support (CLS)

PM TRADE forwarded an initiative to HQ AMC to establish centralized management of contractor logistics support (CLS) for training devices. This would provide uniform and effective CLS procurement planning, solicitation, award, monitoring and corrective action procedures. In addition, it would eliminate duplication of such functions within AMC as separate budgeting and application of funds. If this centralization was approved, a single AMC CLS activity would be established, something that training device users had repeatedly requested.

Center of Excellence

PM TRADE and the Naval Training Systems Center, with support and cooperation from academia and industry, established in FY89 a Center of Excellence (COE) for Simulation and Training Technology. The COE was to serve to advance the state-of-the-art through research, development, engineering acquisition and support of training systems, with the goal of advancing simulation and training technology. The COE executive committee included representation from PM TRADE, Army, Navy, DOD, industrial associations and academia. Funds appropriated by Congress "for the continuation of simulation and training technology activities through the involvement of a university system with a strong base in training and technology transfer," were managed by PM TRADE for the Defense Advanced Research Projects Agency (DARPA). This contractual effort was with the Institute for Simulation and Training (IST) and was used to define benchmarks for technology enhancements to the Simulation Network Program.

Combat Training Center (CTC) Master Plan

The Combat Training Center (CTC) Master Plan was the blue print for operations at the CTCs. It contained an assessment both of the CTC's present status and of the required mid- and long-range actions needed to reach the objectives established by the Chief of Staff of the Army. The Program Manager, Combined Arms Training Systems and Combat Training Centers (CATS/CTC) supported those areas of the CTC which dealt with Devices, Simulators and Simulations (DSS). This support included identifying, costing, and developing a strategy for the DSSs needed to accomplish the objectives.

Software Life Cycle Support

Simulation software programs were increasing in size and complexity as computer technology matured. In response, and as a way of providing economical and effective management of simulation software, PM TRADE was working with CECOM to designate a primary Life Cycle Software Engineering (LCSE) Center for support of training device software. This would result in more efficient configuration control and reduce the potential for duplication of equipment and software tools. It would also concentrate simulation expertise at one location.

Consolidated Contractor Logistics Support

In FY89, PM TRADE awarded a single contractor logistics support contract for Battle Field Simulation and Signal Intelligence Training Devices, thereby reducing the number of contracts and contractors involved in this task from six to one.

Distributed Wargaming System

The Distributed Wargaming System (DWS) was "a Distributed Computer-aided, man-in-the-box simulation and wargaming exercise that allows military personnel to train in the operational art of warfare regardless of the participation of higher, subordinate or neighboring units." PM TRADE was the Army's Executive Agent for the directed procurement of five Corps sets of DWS, in coordination with DARPA. The system was fielded on schedule starting in September 1989, in time to be used in the Caravan Guard exercise as well as in time for the planned use of it in ACE 89 in November 1989.

Armor Training Devices

PM TRADE delivered five M60 Tank Driver Trainers to Palma Hall, Fort Knox, Kentucky, in FY89. They were to be used to provide initial familiarization training for M60 Armor tank crewmen. PM Trade also delivered 162 Video Disc Gunnery Simulation (VIGS) trainers in the Combat Engineer Vehicle (CEV) and M1/M1A1 configurations. The VIGS was a tabletop, 4-man portable, gunnery, target acquisition and tracking trainer. It was used to provide initial, advanced, and sustainment gunnery training and to evaluate gunner proficiency. A training system concept formulation effort was initiated to support the Abrams Block II upgrade.

Army Aviation Training Simulators

The Product Manager for Air Combat Training Systems (ACTS) supported Army aviation training requirements by managing the acquisition of a number of training programs, including the continued fielding and upgrading of elements of the Synthetic Flight Training System (flight simulators). Specific actions taken in support of Army aviation training included the following:

- (1) Completed delivery of seven UH-60 Black Hawk Flight Simulators.
- (2) Completed an upgrade of the training effectiveness of the six CH-47D Chinook Flight Simulators.
- (3) Completed installation of the Computer Reconstructed Images from Scene Photographs (CRISP) system in the AH-1S Cobra Flight Weapons Simulators.
- (4) Awarded contracts to procure a package of training enhancements and configuration upgrades for the fielded AH-64 Apache Combat Mission Simulators (CMS) and to procure two additional AH-64 Apache CMSs.
- (5) Awarded a contract to procure an MH-60K CMS and a MH-47E CMS to support the Army's Special Operations Aviation Mission.
- (6) Entered into a Memorandum of Agreement with the PM, LHX (Light Helicopter Experimental) to support the acquisition of the LHX Integrated Training System (ITS).
- (7) Awarded a Foreign Military Sales contract for the procurement of a variant of the UH-60 Flight Simulator for Saudi Arabia.

Chapter IV

Materiel Readiness

Office of the Deputy Chief of Staff for Readiness

Organization

The DCS, headed by Major General Leon E. Salomon, had its organizational structure and manpower authorizations remain unchanged in FY89. The DCS consisted of the headquarters; Administrative Office; Automated Data Processing Office; Plans and Operations Division; Analysis and Systems Division; Logistic Assistance Division, which was also known as the Logistic Assistance Program Activity, a separate reporting activity within AMC; and the Aviation Division. Throughout the year the DCS was authorized 59 military and 301 civilian spaces.¹

Exercise WINTEX-CIMEX 89

Extensive pre-STARTEX (start of exercise) activity was done by AMC in preparation for the exercise play phase. AMC personnel developed Master Scenario Events Lists for exercise play both at the Department of the Army/Joint Chiefs of Staff level and for AMC. Starting balances for exercise items were submitted, as well as a STARTEX situation report.

AMC and its major subordinate commands activated their Emergency Operations Centers on a 24 hour 7-day week basis, and responded to exercise requirements as appropriate. AMC's exercise objectives were to evaluate its loading and shipping capability for all classes of supply in a simulated large-scale crisis; to analyze and interpret results of EXCAP (exercise capability);² to exercise and evaluate the automated AMC-MOPES (Mobilization and Operations Planning and Execution System); to exercise and evaluate the Secure Command Operations Reports and Exercise (SCORE) system to determine its usefulness as a secure means of communication during crisis; and to examine progress on all appropriate Remedial Action Projects (RAPs).³

¹Unless otherwise noted, information in this section is taken from the DCS for Readiness AHR submission for FY89.

²For classified information about EXCAP, see the DCS for Readiness submission for the FY89 AHR.

³For classified information on this exercise, see the DCS for Readiness AHR submission for FY89 in the AMC Historical Office archives and the after action report kept in the HQ AMC Operations Center.

Congressional Testimony

The Deputy Chief of Staff for Readiness was assigned responsibility for the preparation of the Commanding General's 12 May 1989 testimony before the Senate Armed Services Committee's Subcommittee on Readiness and Sustainability. COL John A. Bohm, chief of the Concepts and Analysis Division, was designated as team chief and LTC Robert J. Pratt, Readiness Analysis Branch was responsible for coordinating the efforts of the Congressional Committee on Sustainability and Readiness testimony team as well as the efforts of some twenty-five representatives who provided input from throughout Headquarters, AMC. He attended briefings and meetings, and coordinated with Army Congressional Liaison and with members of the subcommittee staff.

The testimony team prepared, edited, printed, and distributed the testimony record. The AMC Public Affairs Office prepared the oral presentation and charts for General Wagner from the testimony record copy. The testimony team prepared overhead slides, a point paper book, and a question and answer book for General Wagner's use prior to and during the hearing. The testimony highlighted the impact of the FY89-90 budget cuts on AMC's ability to provide support to the soldier and to sustain readiness. General Wagner again emphasized the point that AMC could no longer do "more with less." The testimony was very well received by the subcommittee.

Contingency Support Activities

The following contingencies were supported by the DCS's personnel and resources during FY89: Alaska Oil Spill, Yellowstone Park Forest Fire, Hurricane Hugo, and the Colombia Anti-Drug Initiative. Support varied from provision of administrative space and support to maintaining an extended hours watch by personnel.

The most demanding of these contingencies was support of disaster relief for Hurricane Hugo which generated a number of requests for direct release of AMC assets to various non-DOD activities. From 22 to 25 September 1989, an extended hours duty cell monitored and directed requests to the appropriate materiel manager. The AMC emergency response network was activated.

Support of Fort Hood, Fort Polk, and Columbia, SC, storm damage recovery was another major contingency effort. A series of storms in May and June 1989 inflicted major damage or destruction on a significant portion of the Army's aviation fleet. Following the first of these on 14 May at Fort Hood, the DCS was directed to act as the focal point for information distribution to the command group and to facilitate requests for materiel support for "get well" actions coming to HQ AMC from the field. A daily significant actions paper was prepared for the command group commencing 17 May 89. Subsequent storm damage to aircraft at Fort Polk and South Carolina Army National Guard facility at Columbia continued these activities into June.⁴

Support of Intermediate Range Nuclear Forces (INF) Treaty

The Operations Center continued to be the focal point for INF Treaty inspections at AMC sites. Notifications of approximately 30 inspections were processed in FY89.

⁴For additional classified contingency operations, see the DCS for Readiness AHR submission for FY89 in the AMC Historical Office archives. For more on the aircraft repair, see the Office of the DCS for Supply, Maintenance, and Transportation portion of this chapter.

Reserve Component (RC) Training

High Tech Regional Training Sites-Maintenance were constructed at Sacramento and Tobyhanna Army Depots. The construction was completed at Tobyhanna in July 1989 and at Sacramento in August 1989. Personnel and equipment authorizations had been documented on unit Tables of Distribution and Allowances, and the full complement of authorized Active Guard and Reserve (AGR) personnel were on hand. Both sites were fully operational, and classes were scheduled throughout FY90. The HTRTS-M would provide transition and sustainment training for soldiers holding low density and higher technical communications/electronics Military Occupational Specialties.

During FY89, 1,394 mandays of Active Duty for Special Work site support were provided to AMC installations/activities hosting RC unit training. Site support was provided to nine AMC installations and activities. Five officer/warrant officer and eight enlisted men (Individual Ready Reserve) were utilized to provide site support.

One hundred fifty-four evaluators were provided to evaluate RC units performing annual training at AMC installations and activities. Thirty-four evaluator requirements were filled by AMC.

An update of AMC Pamphlet 135-1, *Training Smart*, was published 1 June 1989. This update provided information on training opportunities available at each location and on the names and AUTOVON/commercial numbers of reserve component coordinators to be called if additional information was required.

Approximately 3,780 mandays of RC unit training were provided at AMC installation and activities. Approximately 92 percent were provided at Depot Systems Command depots, with the remainder coming from The Armament, Munitions, and Chemical Command's McAlester Army Ammunition Plant and Pine Bluff Arsenal.

Mobilization Planning

The Mobilization/Emergency Actions (MEA) were extensively reworked and published in a change to the AMC Mobilization and Operations Planning and Execution System (AMC-MOPES). The revised MEAs were played in Exercise PROUD EAGLE 90, where, for the first time, all the MEAs were played. The MEAs sparked much exercise play and made for a realistic transition to a wartime environment. Also for the first time, MEA status was reported during Exercise PROUD EAGLE 90. Major subordinate commands made an automated report to HQ AMC each day of the exercise, reporting whether triggered MEAs were open or closed. The reports were consolidated and furnished to the HQ AMC staff for review.

Work continued on automating the mobilization planning system. New programs were furnished to the MSCs and the automated system was used to produce the last change to the AMC-MOPES.

Command Readiness Program

AMC awarded a \$150,000 contract for a Command Readiness Program for to Martin Marietta Energy Systems. The program was a seminar for the senior leadership to review and discuss AMC plans including logistics support plans, AMC-MOPES document, and other plans.

Reserve Component Support to LOGEX

Reserve Component exercise support was provided by HQ AMC to LOGEX at Fort Pickett, VA. The IMA (individual mobilization augmentee) soldiers assigned to HQ AMC manned the AMC "player call"

and provided the command briefings to NATO officers and numerous Reserve Component units participating in the exercise.

AMC General Officer Reserve Components Policy Council (GO RCPC)

The GO RCPC provided AMC with a command focal point for RC policy and support issues. The GO RCPC quarterly meetings identified mobilization and readiness issues which impacted upon RC units, equipment, and training. This council was the leader in the resolution of equipment supportability issues for RC equipment. It had been instrumental in directing and establishing priority for use of AMC resources in support of the RC.

Exercise Participation/Support by Military Plans and Operations Division

JCS and regional command post exercises which were supported or monitored by the War Logistics Plans Branch during the year included REFORGER 89, ULCHI FOCUS LENS 89, TEAM SPIRIT 89, YUMA SAKURA 89, and AHAUS TARA 89.

Prepositioned Ships and Third U.S. Army Aggregate Storage Program

The War Logistics Plans Branch continued to act as the HQ AMC focal point for prepositioned ship activities. It monitored the supply maintenance cycle and assisted in expediting the flow of materiel in support of maintenance operations. It also continued to act as the AMC coordinating authority for the Third U.S. Army aggregate storage program.

War Reserve, LOGPLAN, and Sustainability (WARLOGS) System

The Systems Research and Application (SRA) Corporation completed the development of a Commodity Command Standard System application for computing LOGPLAN (logistics plans) requirements.

Wartime Asset Allocation

In September 1989, the SRA Corporation completed the development of a functional description document which, when implemented in the Commodity Command Standard System, would allocate assets among multiple claimants during wartime operations.

AMC LOGPLAN Reports

The Systems Integration and Management Activity (SIMA) completed development of a revised series of LOGPLAN reports for use by the Army component of joint commands, AMC depots, and National Inventory Control Points (NICPs).

Phase I Time-Phased Force Deployment Data Refinement Conference

AMC representatives attended logistics refinement conferences for OPLANS 1002, 5027, and Base Case Family of Plans (1031, 2200, 4102, 5000, 6600, and 7120). These conferences were hosted by the U.S. Transportation Command at Scott Air Force Base, Illinois.

Individual Mobilization Augmentee (IMA) Support for War Logistics Planning

The 151st IMA Detachment continued to support the AMC war logistics planning mission. Throughout the year, members of the detachment assisted in the development or revision of AMC LOGPLANS 5051-90 and 6600-90.

Centralized Preparation of LOGPLAN/OPLAN Time Phased Force Deployment List (TPFDL) Nonunit Cargo Data

During the fiscal year, SIMA was tasked to act as the AMC control consolidation point for collection of LOGPLAN requirements and sourcing data and for preparation of LOGPLAN nonunit cargo data. By preparing nonunit cargo data at SIMA rather than at the NICPs, LOGPLAN processing time was reduced by four weeks and data accuracy was significantly improved.

Logistic System Program Review (LSPR)

The Analysis and Systems Division was assigned responsibility for coordinating all AMC input to the Logistic System Program Review and for monitoring the overall review. The eighth semi-annual update of the LSPR was held on 9 November 1988 and the ninth semi-annual update of the LSPR was held on 17 August 1989. Both meetings were held at the U.S. Army Logistic Center, Ft Lee, VA, and were hosted by LTG William Tuttle, who was then the Logistics Center Commander. These updates were designed to brief the Vice Chief of Staff of the Army on the latest Army logistics improvement programs.

Functional Area Assessment (FAA)

The Functional Area Assessment team was assigned to the DCS for Readiness on 3 October 1988. The FAA team was involved in the following projects during FY89:

- * 16-18 October 1988 - Medical System Program Review at Ft. Sam Houston, Texas.
- * 18 November 1988 - Aviation In-Process Review (IPR) to the Vice Chief of Staff of the Army (VCSA) at Ft. Belvoir, Virginia.
- * 29 November 1988 - Field Feeding System IPR at the Quartermaster School, Ft Lee, Virginia.
- * 11-12 January 1989 - Special Forces Operations IPR at TROSCOM HQ, St. Louis, Missouri.
- * 6-7 February 1989 - Special Operations Forces IPR at Ft. Bragg, North Carolina.
- * 23 February 1989 - Special Operations Forces FAA to the Army Staff principals at Ft Belvoir.
- * 21 March 1989 - Special Operations Forces FAA to VCSA at the Casey Building, Ft Belvoir.
- * 5 July - 1989 Signal FAA In-Process Review at CECOM HQ, Ft Monmouth, New Jersey.
- * 31 August 1989 - Signal FAA to the Council of Colonels at the Casey Building, Ft. Belvoir.

Total Unit Development Fielding-Review (TUDF-R)

The Total Unit Development Fielding-Review was directed by CG AMC on 29 July 1988. It was a joint AMC and TRADOC initiative to review systems 30 to 36 months prior to the first unit equipped date (FUED) that focused on what was necessary to make the unit operational at FUED. It reviewed facilities, equipment, personnel, training, etc. The mission was temporarily assigned to SMT with a possibility that the FAA team would assume this mission. On 12 December 1988 the DCGRDA and DCGMR were briefed and a decision was made that the FAA team, which was assigned to DCSRE, would do the TUDF-R mission. The first and only TUDF-R was presented to CG AMC and CG TRADOC on

19 May resulting in a total of 40 issues with 67 actions. When both commands changed CGs, it was decided that because the process was so manpower intensive that the would be cancelled.

Operating & Support (O&S) Cost Reduction Advisory Group

The O&S Cost Reduction General Offices/Senior Executive Service (GO/SES) Advisory Group was formed on 28 July at the direction of the DCGMR. The DCS for Readiness was appointed to this group, and, in addition, the DCS also supplied an action officer to the O&S working group. The working group held numerous meetings in order to define the advisory group's charter.

Computer-Aided Acquisition and Logistic Support (CALS)

During FY89 the Army continued to make significant progress in implementing the Computer-Aided Acquisition and Logistic Support (CALS) initiative, which had been mandated by the Office of the Secretary of Defense. AMC continued to be the functional proponent agency for the program. The year's key accomplishment took place on 31 August, when the PM CALS awarded four Phase I contracts to BDM Corporation, Computer Sciences Corporation, TRW Incorporated, and Xerox Corporation. These four contractors commenced a competitive design process for concept development of the Army CALS architecture.

Immediately preceding the design contract awards, an OSD Major Information Systems Review Committee (MAISRC) IPR was held for the purpose of assessing the Army's progress in accomplishing an open task from the 11 May 1988 Milestone 0 MAISRC: "Ensuring that functional requirements are sufficiently defined and provided to industry to allow proposal of cost effective alternatives."

The briefing to the MAISRC IPR panel was presented jointly by AMC and the Project Manager for CALS. To satisfy the specific task of further defining functional requirements, AMC presented an example of a functional matrix, which was being developed. Approval to proceed with design contract awards was received. The functional matrix, developed by AMC to depict expected enhanced processes and values added from the user perspective, was completed and provided to the PM CALS for transmittal, through contracting officials, to the contractors.

In May 1989, leaders of those organizations which were scheduled to be the first involved with CALS implementation came together with appropriate senior officials of the Office of the Secretary of Defense and the Army as well as others in the CALS community to discuss the purpose, plans, and status of the program. The goal of this "CALS roundtable" was to promote a better understanding among key persons and organizations of the development of the program over the next few years. The conference was successful in this respect. In addition, several issues that could impact adversely on the program were identified and tasked for resolution.

From 29 through 31 August 1989, the CALS Functional Coordinating Group (FCG), chaired by AMC, met at Warren, MI. During the course of the meeting, recommendations concerning needed revisions to some of the specific logistical areas and existing automated systems (referred to in the CALS program as Resource Critical Information areas and Islands of Automation, respectively) named in contract documentation were made to the Project Manager. The PM accepted the recommendations for transmittal through appropriate channels to the design contractors.

AMC Support to Development of the Combat Training Centers

AMC's lead for supporting development of the Combat Training Centers was transferred from DCS for Readiness to the DCS for Development, Engineering and Acquisition (DCSDE). The DCS for Readiness did, however, retain a support role on a request basis.

The change was made to present a single face to the combat training centers to coordinate AMC issues and to avoid confusion and duplication of efforts. The centers were developing sophisticated training devices in an effort that was being led by AMC's Project Manager for Training Devices (PM TRADE). As that PM reported to the Deputy Commanding General for Development, Engineering and Acquisition, the selection of the DCSDE simplified the chain of command involved in support for the Combat Training Centers.

Army Readiness Reporting System (ARRS)

The Readiness Analysis Branch was responsible for the revision of Army Regulation 700-138, *Army Logistics Readiness and Sustainability*. The draft revision to AR 700-138 was completed in June 1989 and submitted to the Readiness Analysis Branch for coordination with Headquarters, Department of the Army, Office of the Deputy Chief of Staff for Logistics. The technical changes were coordinated and approved. The draft was submitted to the United States Army Printing and Publishing Agency in October 1989 and resubmitted with the required corrections in December 1989. The publication date was scheduled for February 1990.

Readiness Integrated Data Base (RIDB)

The MRSA-maintained Readiness Integrated Data Base (RIDB) was the Army's central repository for classified materiel readiness data. It consisted of the main database and RIDB work stations at each of the AMC major subordinate commands; HQDA Office of the DCS for Logistics; Headquarters, National Guard Bureau; and HQ AMC. During CY89, the HQ AMC and major subordinate command RIDB workstations were upgraded as part of on-going efforts to improve the readiness communities readiness analysis capability.

The upgrade included installing improved hardware and software at each of these sites, providing the capability to download and process data from the RIDB, and the capability to display the data in formats more suitable for analysis. Additionally, computer hardware and software were procured for LAO-Europe (Logistics Assistance Office-Europe) and LAO-Far East in FY89 in order to further expand and extend AMC's readiness analysis capability. When installation was completed, which was scheduled for February 1990, this equipment would provide LAO-Europe and LAO-Far East with the ability to conduct timely in-country materiel analyses for units and equipment experiencing readiness problems.

To further reduce the cost associated with operating the RIDB network, a test was conducted in CY88 to determine the feasibility of using Secure Telephone Units (STU) in place of communications security (COMSEC) equipment to access the RIDB. The test was successful, and plans were developed to implement the use of STUs throughout the network. Utilizing STUs would substantially reduce network operating costs since these devices could be used with standard commercial telephone lines instead of requiring the more expensive dedicated lines. The anticipated annual savings were estimated to be approximately \$80,000 per year.

Readiness Video Teleconference

As part of continuing efforts to reduce travel costs, HQ AMC hosted monthly readiness video teleconferences with MSC Readiness Directorates. The thrust of these conferences was to assess and discuss readiness issues which impacted the Army's go-to-war capability. These conferences proved to be extremely valuable, particularly when addressing materiel problems affecting major weapon system readiness since the majority of major weapon systems were managed by more than one MSC.

Quarterly Readiness Briefing to the DCGMR

The quarterly readiness briefing to the DCGMR continued throughout FY89; however, in order to improve the timeliness and level of detail of the briefing, the format was revised and, starting in January 1990, it was to be presented monthly instead of quarterly. The CG AMC would also receive this briefing each month. The purpose of the briefing was to provide the AMC command group with a detailed assessment of materiel and unit readiness problems impacting the combat capability of divisions, separate brigades, and regiments.

Unit Status Reporting

During FY89, the DCS continued to receive and process Unit Status Reports for AMC's TMDE (Test Measurement and Diagnostic Equipment) units. These reports summarize the unit's readiness capabilities and highlight problems related to training, equipment, and personnel. The reports were reviewed for accuracy and analyzed to determine if the reporting units were experiencing readiness related problems and to determine if assistance was required. Upon completion of this review, the reports were forwarded electronically to the Office of the Joint Chiefs of Staff. In October 1988 the DCGMR directed that AMC General Support Forces, such as military police units, be no longer required to submit Unit Status Reports since they were not deployable.

Readiness Improvement Initiatives

In January 1988 the DCS for Readiness directed the Analysis and Systems Division to conduct an in-depth analysis of the materiel readiness reporting system to determine how the audits timeliness of the reporting system could be improved to provide more specific information on system and subsystem failures. As a result, the Army Materiel Status System (AMSS) was developed. To improve both the timeliness and the level of detail of reported data, AMSS would use the Standard Army Maintenance System (SAMS) and the Unit Level Logistics System (ULLS) as the input media. These automated Standard Army Information Management Systems (STAMIS) were already deployed to field units and were used by the soldier to manage and track daily supply and maintenance actions.

Using these systems as the source for materiel readiness reports provided benefits for AMC and the units in the field. The principal benefit to the field would be the elimination of the current forms used to report readiness, since the required data would be electronically retrieved from already existing automated sources; i.e., SAMS and ULLS. AMSS would also benefit AMC by providing supply, maintenance and readiness managers timely component level failure information for systems and equipment reported Not Mission Capable (NMC). By improving the timeliness and quality of the reported data, AMC would be in a much better position to positively influence Army materiel readiness. Current milestones had the AMSS being tested and fielded to active divisions in November 1990, with the remaining forces coming on-line as hardware was fielded.

Centralized Scheduling of Army Aircraft

The Centralized Army Aviation Scheduling Office (CAASO) at Ft. Belvoir, VA scheduled all Army Operational Support Airlift (OSA) flights utilizing Army fixed-wing assets nationwide. AMC made up 16 percent of the C-12/U-21 fixed wing aircraft assets which supported CAASO. During FY89, AMC aircraft provided 979 support missions to other major commands, and the MSCs were supported 952 times by other MACOMs. The MSC Flight Activities flew 3,244 flights in support of their mission. A major issue identified after this first year of centralized scheduling was the overtime and TDY costs to pay AMC civilian pilots. Discussions were ongoing with the DCS for Resource Management to develop uniform procedures to provide adequate funding for civilian pilots who supported CAASO missions.

Logistic Assistance Program Activity Organization Consolidation

In FY89 the Logistic Assistance Program Activity (LAPA) concentrated on developing new or revised policies and procedures and in consolidating programs as a result of the FY88 reorganization which had created the LAPA as separate reporting activity. Revised TDAs were developed and approved, and a standard budget management system was put in place which consolidated all LAOs under LAPA. New lines of authority, communications and reporting were established. The Army Management Engineering Activity continued its subject matter assessment of the organization's mission, functions and structure, with its final report expected by the Spring of 1990.

Logistic Assistance Program Automation Project

In the area of automation, the initial infusion of over two million dollars of office automation equipment to the approximately 60 LAOs was completed, and the emphasis shifted to the development of standard automated systems. Efforts were begun to design a Personnel Management Data Base and a Logistic Assistance Representative Activity Reporting System. Work was begun on the development of a multi-year procurement instrument which recognized the need for the development of a long-range automation strategy and provided the mechanism for implementing that strategy. At the end of the fiscal year, a contract was awarded for a standard Logistic Assistance Representative Manpower Requirements Determination System. This system would be on-line at LAPA and the six MSCs in time for the FY91 manpower requirements cycle.

Logistic Assistance Program Activity On-going Activities

Efforts continued throughout the year on rewrites of AR 700-4, *Logistics: Logistics Assistance Program*, and AMCR (DARCOM Regulation) 700-19, *Logistics: Logistics Assistance Mobility Program for Logistics Assistance Personnel (Civilian)*. The Activity also pursued a benefits package in support of its emergency essential mobile logistic assistance personnel. It was also developing an overall LAP training program and it initiated action to recruit a LAP training coordinator. Overall, the mission of managing the Army's Logistic Assistance Program and coordinating efforts to improve the overall readiness of Army equipment was proceeding on target.

Office of the DCS for Supply, Maintenance, and Transportation

Organization and Personnel

On 1 October 1988, the Office of the DCS for Supply, Maintenance, and Transportation (ODCSSMT) was authorized 189 civilians and 14 military for a total of 203 positions. As of 1 October 1989 the ODCSSMT was authorized 19 military and 209 civilians for a total of 228 positions. The new organizational structure for the DCS differed slightly from the one in use in November 1988. The DCS continued to be essentially split into two major sections: a Directorate for Logistics Management and a Directorate for Logistics Support. At the end of FY89, however, the Directorate for Logistics Management lost its Information Systems Integration Office and its Weapons Systems Management Action Plan Office, although it continued to have its three main divisions: Supply Division, Maintenance Division, and Transportation and Equipping Division. The functions of the two abolished offices were absorbed by the Logistics Systems Division.⁵

⁵Unless otherwise noted, all the information in this section is taken from the DCS for Supply, Maintenance and Transportation AHR submission for FY89.

During most of FY89, the Deputy Chief of Staff for SMT was Major General Eugene B. Leedy, who had occupied the position since 14 September 1987. On 25 September 1989 he was replaced by Major General Charles M. Murray.

Integrated Logistics Support Division

Logistics Planning and Requirements Simplification System (LOGPARS). LOGPARS was a personal computer-based expert system for Integrated Logistics Support (ILS) managers. During FY89, through a contract with the General Services Administration, American Management Systems developed/enhanced an operational prototype of LOGPARS. The five modules that had been developed or enhanced--ILS strategy, warranty advisor, milestone schedule advisor, ILS Plan advisor, and ILS Statement of Work advisor--were fully integrated and performed consistency checks. Development of additional modules was planned.

New Equipment Training (NET). Significant progress was achieved in the NET area during FY89. The Army Modernization Training Automation System (AMTAS), the HQDA official database for all unclassified New Equipment Training Plans (NETPs) Army-wide, underwent major enhancements that both made the system more user friendly and upgraded the system's capabilities. One of the most significant capabilities added was the ability for users to download NETPs from the centralized database (INFONET) and print them locally, off-line. This added capability eliminated the need to use the costly process of printing NETPs directly from INFONET (on-line) or to suffer the delay that resulted from having the contractor print NETPs overnight and mail them to the user. One of the major enhancements planned for FY90 included the capability to upload or download multiple NETPs simultaneously. Additional capabilities and user friendly features were being planned. The enhanced AMTAS was supported by old and new users. AMTAS users increased significantly during FY89, and this trend was continuing in FY90.

DA Pamphlet 350-40, *Army Modernization Training Plans for New and Displaced Equipment*, was published in August 1989. AR 350-35, *Army Modernization Training*, was revised and should be published during FY90.

Army Logistics Support Analysis (LSA) Enhancement Plan. The Army LSA Enhancement Plan identified and scheduled tasks necessary to accomplish the Army's LSA/LSA Record mission. The plan was updated and approved annually to maintain currency of taskings and priorities. The Army LSA Enhancement Plan for FY89 was approved by the DCS for Supply, Maintenance, and Transportation.

MANPRINT/LSA Technical Work Group (TWG). The MANPRINT/LSA TWG was established in October 1988 to identify and define data relationships between MANPRINT and LSA documentation and to establish Logistics Support Analysis Record (LSAR) data requirements that interfaced with MANPRINT. Subgroups were established to review the MANPRINT and LSA analyses and tasks in order to determine where overlaps and voids existed and to make recommendations to resolve problem areas. The subgroups established were (1) Manpower, Personnel, and Training; (2) Human Factors Engineering; (3) System Safety and Health Hazards; and (4) Task Analysis. The TWG and its subgroups consisted of both ILS and MANPRINT personnel from throughout the AMC and TRADOC communities. Their work was completed in September 1989 with the final report due to HQ, AMC at the end of December 1989.

Acquisition Management Milestone System (AMMS) On-line Query/Update System (OLQUS). Originally developed by AMC to manage Integrated Logistic Support milestones, AMMS has evolved into the Army standard program schedule management system as defined in DA Pamphlet 700-26. The OLQUS was developed to make access to the data quick and simple, and to ease data entry for the program managers.

Acquisition Management Milestone System (AMMS)/Materiel Development Automated Milestone System (MADAM) Interface. The AMMS and MADAM databases were linked through an automated

interface in August 1989. As TRADOC approved new Operational and Organizational Plans, a Common Reference Code (CRC) was generated identifying the new requirement in the MADAM database, and the program was automatically identified to AMMS. The AMMS provided this information to project offices within the materiel development community, thereby affording early coordination of new materiel requirements between the combat and materiel developers.

Army ILS Executive Committee. This committee was a forum chaired by the Headquarters, Department of the Army Deputy Chief of Staff for Logistics (HQDA DCSLOG), and was used to identify and resolve policy and procedural problems related to development, standardization, and execution of ILS for Army acquisition programs. The committee consisted of the heads of ILS offices from HQDA; AMC; AMC's Major Subordinate Commands; the Logistics Center; the Training and Doctrine Command schools; the Information Systems Command; the Office of the Assistant Secretary of the Army (Research, Development and Acquisition); Logistics Evaluation Agency; the U.S. Army Corps of Engineers; the Army Materiel Systems Analysis Activity; the Materiel Readiness Support Activity; The Surgeon General; the Military Traffic Management Command; and the Project Manager, Training Devices.

The Army ILS Executive Committee had five subcommittees to address and resolve specific tasks: (1) ILS Reviews; (2) ILS Policy; (3) ILS Supportability Design Influence; (4) Acquisition Management Milestone System; and (5) ILS Contractor Support. Notable accomplishments during FY89 included standardizing ILS assessment criteria; publishing DA PAM 700-127, *ILS Manager's Guide*; improving ILS/MANPRINT coordination; updating and rewriting AR 700-127, *Logistics: Integrated Logistics Support*, to reflect changes in acquisition management; and updating the DA ILS Master Plan.

DA Integrated Logistic Support Long Range Master Plan. This plan was updated by HQ AMC in the prescribed format for all DA DCSLOG master plans, as requested by HQDA, and approved for distribution and implementation in October 1989. The plan was the result of input provided by logisticians from all levels of the Army, containing long range planning initiatives and current issues that impacted the Army Logistic System. Categories of issues covered were ILS Reviews, ILS Policy, Acquisition Management Milestone System, Supportability Design Influence, and ILS Contractor Support. Tasks, milestones, and status were included.

Design Influence Action Plan (DIAP). The DIAP had been integrated into the DA ILS Master Plan and a Design Influence subcommittee had been established to carry out the requisite actions to ensure that design influence was entrenched in the process of equipment design. The subcommittee had taken a positive approach to the task of design influence by establishing a dialogue between the combat developer and the materiel developer and by identifying regulations, pamphlets, and standards that had or needed design influence impact. These documents were being updated to ensure that design influence policy and procedures were adequately covered.

Maintenance and Materiel Management Operations Reviews. In FY89 two quarterly reviews were held: one at Fort Knox, Kentucky, on 18 June 1989 and one at New Cumberland Army Depot, Pennsylvania, on 27 July 1989. These reviews were part of an effort within the AMC community to identify, analyze, and provide direction and command emphasis to those significant maintenance, supply, and support-related problem areas designated for special and intensive management scrutiny.

Total Package Fielding. A total of 119 weapon systems were total package fielded in FY89 at a cost of \$108.5 million in OMA P2 funds. HQDA directed that an additional five weapon systems not be fielded by TPF in FY89 due to budget constraints.

Logistics Resources Division

P7M Materiel Maintenance and Maintenance Support Activities/Depot Maintenance Program - (PE 732207). Depot Maintenance actual obligations for overhaul/repair/conversion for FY89 were in billions:

TABLE IV-1
Depot Maintenance Program Obligations

Contract	\$1.541
DESCOM	.997
Mainz AD	.162
Other	<u>.110</u>
	\$1.810

Source: DCS for Supply, Maintenance, and Transportation FY89 Historical Submission.

The FY89 actual obligations of \$1.8 billion for overhaul/repair/conversion by MSC and other were:

TABLE IV-2
Overhaul/Repair/Conversion Obligations by MSC

<u>COMMAND</u>	<u>CONTRACT</u>	<u>ORGANIC</u>	<u>MAINZ AD</u>	<u>OTHER</u>
AMCCOM	18	100	12	37
AVSCOM	315	218	0	0
CECOM	100	134	3	18
MICOM	84	101	6	0
TACOM	14	342	141	5
TROSCOM	10	22	0	1
OTHER	0	80	0	49
TOTAL	\$541M	997M	162M	110M

Source: Historical Submission, DCS for Supply, Maintenance, and Transportation, FY89.

Congressional language in the Defense authorization bill mandated a 60 percent organic versus 40 percent contract split for the depot maintenance program. In addition, it placed a manpower floor at the communications-electronics depots at the FY85 levels. A floor was also established that mandated that at least \$1.709 be spent for Other Depot Maintenance (excluding modification and conversion program).

The organic goal of depot maintenance workload was met but at the end of FY89, none of the organic C-E depots were in compliance with the McDade (or Matsui) amendment.

TABLE IV-3
Communications-Electronics Depots Manpower

	<u>FY85 ACTUALS</u>	<u>FY89 ACTUALS</u>
Lexington Army Depot	146	131
Sacramento Army Depot	2412	2201
Tobyhanny Army Depot	3061	2841

Source: Historical Submission, DCS for Supply, Maintenance, and Transportation, FY89.

The congressional floor for other depot maintenance was met and, in fact, exceeded by approximately \$3 million. Depot maintenance absorbed the P7S depot supply support functions in FY89 and funded the supply support costs within its existing Depot Maintenance Program (\$80 million). There was a major Army Industrial Fund (AIF) cash shortage in FY89, which mandated the repricing of depot maintenance programs, primarily aircraft at Corpus Christi Army Depot.

Serious impact on the depot maintenance programs resulted from the requirement to fund the DA-directed M1 and Bradley Fighting Vehicle System 10/20 programs and the aircraft storm damage at Fort Hood and Fort Polk without additional resources.

Maintenance Support Activities (PE 738017). The Maintenance Support Activities Program (PE738017) was critical to the fielding of new systems and equipment; maintenance engineering support before, during, and after deployment; new equipment training for units receiving equipment; training for all depot maintenance personnel; updating of publications and technical manuals; and technical assistance to support equipment after fielding. The FY89 program ended the year at \$582 million. See Table IV-4 for FY89 obligations (following page).

TABLE IV-4
PE 738017 Obligations

<u>COMMAND/ACTIVITY</u>	<u>\$(M)</u>
AMCCOM	77
AVSCOM	115
CECOM	89
DESCOM	32
MICOM	135
TACOM	75
TROSCOM	30
MRSA	13
USACTA	3
HQ	10
AMSAA/PEO COMM/LABCOM	3
TOTAL	582

Source: DCS for Supply, Maintenance, and Transportation AHR submission for FY89.

Funding was not keeping pace with requirements. Significant unfinanced requirements (e.g., post production engineering) remained at the end of the fiscal year.

PE 721111 Supply Depot Operations. The shipping and receiving functions at AMC depots were fully accomplished within constrained resources. Reduced workyear availability for FY89 did restrict the accomplishment of supply support functions such as care of supplies in storage (COSIS), inventory, and rewarehousing. These functions were being accomplished at about 50 percent of requirements. Supply costs to support the depot maintenance program were transferred to the P7M program in FY89. Supply depot operations were reimbursed by P7M for the effort required to supply the maintenance lines. Efforts were continuing to improve workload forecasting and to have the costs charged to the customer be more representative of the work performed.

PE 721112 Supply Management Operations. There were no significant unfunded requirements remaining at year-end. The U.S. Army Security Affairs Command reimbursable personnel were scheduled to be transferred out of this program in FY90.

PE 722829.1 Program/Project/Product Management. There were no major unfunded requirements remaining at year-end.

PE 728009 First Destination Transportation and PE 728010 Second Destination Transportation. All known requirements were funded during the fiscal year.

PE 381011d Worldwide Cryptological Activities and PE 393401 Communications Security. Management of PE 381011 (Worldwide Cryptologic Activities) and PE 393401 (Communications Security) were transferred to DCS for Intelligence and Information Systems Command, respectively, in FY89. It was determined by AMCRM and AMCSM that DCSSMT was not the proper manager for these programs.

TABLE IV-5
Recap of Obligations
FY 89
(\$000)

<u>PE</u>	<u>TITLE</u>	<u>DIRECT</u>	<u>REIM</u>	<u>TOTAL</u>
721111	Supply Depot Ops	445.5	32.9	478.4
721112	Supply Mgt Ops	171.6	19.0	190.6
722829.1	Proj/Prog Mgmt	100.0	19.2	119.2
728009	First Dest Trans	41.3	2.6	43.9
728010	Second Dest Trans	54.0	.8	54.8
728013	Overseas Port Opns	.5	--	.5

Source: DCS for Supply, Maintenance, and Transportation Historical submission for FY89.

Wholesale Budget Preparation System. AMC installed for the first time an in-house automated system designed to compute, consolidate, and submit AMC's Wholesale Army Stock Fund (ASF) and Procurement Appropriation-Spares (PA-2) resource programs. With this implementation, AMC divorced itself from relying on Boeing Computer Services, an outside contractor that, from 1984 until the in-house system became operational in FY89, provided AMC with its ASF/PA-2 automation needs. The in-house system, which was developed and implemented by SIMA, Chambersburg, PA, was installed using existing equipment. It incorporated numerous enhancements not found in the Boeing system and it saved AMC

from \$150,000 to \$200,000 per year in contractor costs. The ASF portion went on-line in February 1989, in time for preparing AMC's FY 90/91 ASF Midyear Budget; the PA-2 portion became operational in June 1989.

Army Stock Fund. In FY89, the ASF continued to be under the OSD-imposed restriction that allocated AMC's Operating Obligation Authority on a quarterly basis. This had been in effect since 1986 and was imposed to improve AMC's operating ASF cash outlays (which at one point in FY88 stood at a negative \$180 million). The cash position improved significantly in FY89; net cash generated from operations was \$253 million, resulting in operating cash going from a negative \$97.6 million in October 1988 to a positive \$35.8 million in September 1989. Much of this improvement was due to tight obligation practices at the MSCs, changes to AMC's credit policies, and to greater than forecast demands.

All MSCs, except AVSCOM, fully obligated their FY89 programs. Of a \$1.187 billion operating program, AMC executed \$1.127 billion. AVSCOM fell short of full obligation by \$50 million, of which \$35.6 million was due to actual delays in the acquisition process. The remaining \$14 million was excess generated from price savings. In FY89 AMC's ASF war reserve program, though funded at only \$136.6 million against a requirement of \$874 million, was at its highest funding level in four years (FY 87, \$0; FY 88, \$9 million; FY 89, \$137 million; FY 90, \$0). War reserve spending continued to be down-played.

Procurement Appropriation-Spares (PA-2). AMC in FY89 attained its highest PA-2 obligation rate in more than five years, 90 percent. However, FY89 also saw the lowest actual dollar amount obligated since FY85. AMC obligated \$1.244 billion against a \$1.394 billion PA-2 program.

A freak storm that swept through Fort Hood, TX, in May 1989 and subsequent storms at Fort Polk, LA, and in South Carolina left significant damage to numerous Army aircraft. As a result, AMC had an unfunded aviation PA-2 program in excess of \$70 million. The Army went to Congress with a request for additional aircraft funds to cover this requirement. It appeared, however, that no additional funding would be made available.

Logistics Systems Division

AMC Standard System (AMCSS). The AMCSS Task Force was established in August 1989 and consisted of AMC personnel supported by contractors (BDM and CACI). The focus was on identifying 8-10 quantum process improvements and technological fixes in the areas of supply, maintenance, procurement, provisioning, distribution and financial management. The approach had been to review current and emerging logistics systems for areas that would provide quick payoffs, while streamlining wholesale logistics processes. Key efforts that would be incorporated into AMCSS included the expansion of the Objective Supply System (OSS) and prototyping Readiness Based Maintenance (RBM), Data Based Provisioning and Asset Visibility.

Objective Supply System. Based on direction from the Commanders of AMC and TRADOC, a task force was chartered to develop an Objective Supply System. A proof of principle test of a system that forwarded a supply clerk's request for materiel to the source of supply on the same day the request was generated was held at Fort Hood. The test was so successful that the Vice Chief of Staff of the Army directed that the test bed be maintained at Fort Hood and an OSS operational prototype be developed for incorporation into the Army standard systems. Additionally, plans were being made to test the Objective Supply System in USAREUR.

Supply Division

Major Item Historical Inventory Database. In 1987, the Commanding General directed the development and maintenance of a historical inventory database for all major items in the supply inventory.

This effort would provide future AMC Commanders with backup data for any anticipated Congressional inquiries. The Systems Integration Support Activity developed a short-term solution which displayed end-of-Fiscal Year assets for FY87, FY88, and FY89. A long-term solution was part of the ongoing Continuing Balance System - Expanded (CBS-X) redesign effort.

When the redesign was completed, it would allow the querying of various database elements through multiple retrieval methods. As of 27 June 1989, year-end funds (FY87) were found and reprogrammed to procure a Model 204 Data Base Management System for SIMA. This software system was required to capture all the necessary data elements involved in stratifying major item assets from year to year.

The DCS for Information Management and the DCS for Supply, Maintenance, and Transportation reprogrammed \$203,000 to buy the Model 204 software system before the 30 June 1989 contract expiration date. A savings of \$80,000 was realized over the original estimated price for the same contract (sole source) because the contract cutoff date was met. The U.S. Army Communication and Electronics Command (CECOM), as the assigned Project Manager, assisted in the effort by expeditiously processing a Military Interdepartmental Purchase Request (MIPR) to Hanscom Air Force Base, where the contractor was based. SIMA was obtaining the necessary set-up instructions from the contractor for the new database management system and would start providing the required reports by the second quarter of FY90.

Prepositioned Equipment Requirements List (PERL). The PERL was the basic document for Prepositioning of Materiel Configured to Unit Sets (POMCUS) unit load planning. It combined the POMCUS Authorization Document (PAD) and the Combat Equipment Group, Europe (CEGE) POMCUS property book into a hardcopy listing of equipment authorized and on hand for POMCUS units. The document was used for movement planning and told the units what equipment they would have to bring with them in the event of mobilization. The production of the PERL was previously the responsibility of Forces Command, with assistance from United States Army, Europe.

As a result of problems experienced in the production of the report, and the fact that SIMA had more up-to-date on hand data (through CBS-X), SIMA was requested to explore the feasibility of taking over production of the report. This was done with AMC's approval. SIMA had produced and further enhanced the report by adding on-hand data from the CONUS-based POMCUS unit to it. This report was proven to be an outstanding success. SIMA was also developing a program to place the PERL on a personal computer floppy disk. Dependent upon the type of hardware available, this data could be accessed via computer network. Previously, data was provided by microfiche.

Operational Projects Database. The Operational Projects Stock Status Report was generated from inputs received in a non-automated fashion in accordance with ARs 710-1 and 710-3. This had been proven by various U.S. Army Audit Agency (USAAA) studies and reports to be time consuming and inaccurate. SIMA had operated more or less as a mailbox to receive Operational Project data via card format and then batch processed the data cards into the Operational Projects Stock Status report. The data was received and processed quarterly.

This process was very time-consuming and met extensive resistance from the activities responsible for submitting the data. Last year, a Systems Change Request was submitted by the Supply Division which recommended that SIMA develop and build an overall Operational Project database. The programming for this database had been completed and it was expected to be on-line by January 1990. Access would be through interface modems directly to the database.

Automated List of Items (LOI) For Operational Projects. The LOI specified the items needed for a particular operational project. Currently, the LOI was prepared on a typewriter and submitted through channels for editing. This was a very labor-intensive and time-consuming task. If extensive editing was required, the LOI had to be redone in its entirety. An automated LOI on floppy disk was developed for

this purpose. A copy of this automated LOI was distributed to each major command during the first Operational Project IPR held in Atlanta, GA, during October 1989. Use of this procedure should significantly reduce workload at both the MACOM level and at the AMC major subordinate command level.

War Reserve In-Process Review. The AMC-sponsored 1989 Worldwide War Reserve IPR was held in St. Louis, Missouri, from 13-16 February 1989. The 64 attendees addressed 64 issue areas and 78 taskings. Nineteen of the issue areas were finalized during the IPR. Key discussion areas included Implementation of Centralized Management, War Reserves Stockage List Selection and Update, Forward-Positioned Prepositioned War Reserves, Security Classification of War Reserve Data, Stratifying CONUS Stored War Reserves by OCONUS Command, War Reserves Automated Process Mismatches, and War Reserve Funding for Conserved Peacetime Obligational Authority.

Consumable Item Transfer (CIT) To The U.S. Defense Logistics Agency (DLA). In October 1988, the HQ AMC Deputy Commanding General for Materiel Readiness (DCGMR) tasked the DCS for Supply, Maintenance and Transportation to work with DLA in revising and energizing the CIT management plan. This plan was presented to all Army CIT program focal points at a Logistics Reassignment Workshop in February 1989. In January 1989, the DCGMR had sent a memorandum to all MSCs requesting their support of the program.

The plan set a National Stock Number (NSN) transfer goal of 200 items per MSC per month. In February 1989, DLA provided the Army with an Office of the Secretary of Defense directive requesting automation of the Logistics Reassignment process to reduce manual workload. DLA also indicated that transfers could not begin until automation was implemented. In March 1989, Commodity Command Standard System "Urgent" System Change Request Number XSMMSC907401 was developed to comply with the automation requirement for the CIT program. On 20 April 1989, an in-process review was held with DLA. The Army provided a candidate file tape of 37,477 NSNs which had been reviewed for transfer by the MSCs. In August 1989, an interface test plan was developed by the Army and DLA. The projected target date for the first transfers to DLA under the new automated procedures was December 1989.

Reduction of Depot Stocks. In November 1988, AMC Depot Storage Occupancy rates were 99 percent at Area Oriented Depots (AODs) and 86 percent overall, compared to an optimum efficiency target of 85 percent. In an effort to reduce the occupancy rates of unneeded materiel, the National Inventory Control Points (NICPs) were directed to review certain categories of unserviceables and offer "As is - Where is" to Foreign Military Sales (FMS) customers, or to initiate disposal actions. FY89 disposal efforts were extremely successful - supply class VII (major items) disposals increased by \$20.8 million, from \$38.4 million in FY88 to \$59.2 million in FY89. Similarly, for materiel in classes other than class VII, disposals increased by \$205.6 million in FY89, from \$318.8 million in FY88 to \$524.4 million in FY89.

Depot System Command (DESCOM) Retail Inventory Levels and Critical Cash Impacts. In June 1989, DESCOM identified an estimated \$20 million to \$25 million shortfall in credits owed to the Army Industrial Fund (AIF) for materiel returns and requested AMC assistance in maintaining AIF cash solvency. An analysis of the situation indicated the credit problem was driven by the materiel returns time frames permitted in AR 725-50 compared to the extensive times actually experienced by the depots, as well as a large amount of anticipated credits claimed by Corpus Christi Army Depot (CCAD).

"Urgent" Commodity Command Standard System (CCSS) Systems Change Request (SCR) Number XSMMSC922101 was initiated in August 1989 to remove inconsistencies in the Army's creditable materiel returns processing program, and \$12.2 million of anticipated credits at CCAD were deemed invalid and removed from the CCAD General Ledger Accounts. This single item accounted for 45 percent of DESCOM's outstanding AIF cash balance as of August 1989.

Common User Item List. In July 1987, HQDA directed the Army to take the lead in coordinating DOD actions necessary to implement the DOD portion of the Common User Item List (CUIL). The CUIL established a requirement for NATO countries to compile a database which would identify like items used on weapon systems common to NATO countries. Definitions and procedures for the CUIL were stated in NATO Standardization Agreement (STANAG) 2386.

The CUIL database would sustain equipment interoperability, survivability, and supportability of NATO land forces. The source for the CUIL database had been determined by SIMA, Logistics Center (LOGC), Catalog Data Activity (CDA) and AMC. CDA developed an initial prototype CUIL tape of items common to the M109A1/A2 self-propelled howitzer. The prototype tape was sent to the NATO Maintenance and Supply Agency (NAMSA) in May 1989. NAMSA reviewed the tape in June 1989 and publicized a favorable report during a 20-22 November 1989 meeting at NAMSA.

Defense Inactive Item Program (DIIP). The DIIP provided item managers with an automated process to expedite inventory control. It was an automated cataloging process that analyzed National Stock Numbers (NSNs) for the purpose of inventory control by identifying obsolete items for deletion. The computer used data maintained by functional elements to generate delete notifications to the item managers. The item manager reviewed the delete notifications and then made a decision to delete or retain the item. This program also generated a "flasher" to the item managers to dispose of assets on items that should have been deleted from the system. The DIIP automation process was being revised to provide increased visibility of inactive items.

Improving Cataloging Goals. In January 1989, the AMC CG tasked the MSCs to improve the quality of data in the Federal Cataloging System (FCS) by placing emphasis on compliance with system policies and procedures. Goals were established by Federal Supply Class (FSC) for three of the cataloging tasks that generate data used by the field. Goals were established for using the Descriptive Method Identification rather than the Reference Method which provided no characteristic data to the user. The second area selected was Approved Item Names as defined in the appropriate Federal Item Identification Guide. The third area was to encourage the use multiple Reference Numbers in order to identify as many sources as possible and increase competition among contractors. The goal for Descriptive IIs was 50 percent for new items entering the system.

The MSCs reviewed 7,674 Reference Type II and upgraded 4,716 to Descriptive Type II in the third quarter of FY89. The goal for adding reference numbers to NSNs was 50 percent. The MSCs were able to do this for only 33 percent of the new items in the third quarter of FY89. The goal for use of Approved Item Names was 85 percent. The MSCs had an 89 percent average for use of Approved Item Names in third quarter of FY89. Performance was measured by Logistics Data Management Total Quality Management Indicators. Performance was published quarterly in the Logistics Data Management Total Quality Review and in the Supply, Maintenance, and Transportation Review and Analysis provided by the DCS for the AMC Command Group.

Management of Depot Level Repairables. By direction of Headquarters Department of the Army, management philosophy in Europe was changed to eliminate "closed-loop" management. Ownership/management of depot level repairables would be assumed by AMC, thereby providing vertical asset visibility of depot level repairables in Europe. Since the transfer of accountability on 15 February 1989, overall management of depot level repairables had improved.

In a test, Europe's percent of fill on 26 of the 269 selected depot level repairables increased from 28 percent in February 1989 to 67 percent in October 1989. The test continued to be a "good news" story, evident by the improved readiness posture in Europe. The USAREUR Deputy Chief of Staff for Logistics briefed this success story at the European Logistics Conference on 16 November 1989. A recommendation was made to expand depot level repairable management in Europe to all MSCs, and an implementation

planning meeting held from 5 to 7 December 1989 developed recommendations and milestones to expand test parameters.

European Redistribution Facility (ERF). ERF was operational with three sites providing a single turn-in point for supply Class IX (repair parts), maintenance-related supply Class II (clothing and individual equipment), and IV (construction) materiel. The third ERF site at Grossauheim, which supported the V Corps west of the Rhine, became operational on 27 November 1989. Redistribution of serviceable high-demand items had been centralized in September 1988 with stockage facilities at the ERF main facility located at Nahbollenbach, Federal Republic of Germany. Underway through 31 March 1990 was a test of a change in ERF operating procedure to reduce theater "buy-back" of consumer funded items processed through the ERF.

Supply Management Career Program. Through the fourth quarter of FY89 there were 5,602 supply careerists within the AMC community. This represented approximately 75 percent of the 7,423 supply careerists within the Department of the Army. The annual supply career planning board meeting was conducted on 6 to 7 November 1989. Among topics discussed was funding for the AMC Supply Management Intern Program since there was a shortage of funds for recruitment of AMC supply interns. A DA Supply Career Appraisal Panel was conducted on 8 to 9 November 1989 to process reconsiderations, add-ons, and initial submissions of supply career appraisal packages. The panel screened and evaluated approximately 240 packages.

Stock Control and Requisition Processing Improvements. FY89 saw significant turbulence as well as some significant accomplishments in the areas of stock control and requisition processing. DOD, at the request of Navy and Air Force, put a hold on the release of all changes to the Military Standard Requisitioning and Issue Procedures (MILSTRIP), to include those planned for special release 90:14 scheduled for 1 November 1989. No sooner had new implementation dates been negotiated by the Department of Defense MILSTRIP committee, than the committee imposed a freeze on further MILSTRIP changes so that more emphasis could be placed on the Modernization of the Defense Logistics Standard Systems.

The Stock Control Functional Coordinating Group (FCG) workload projection at the beginning of Fiscal Year 1989 was 22 System Change Requests (SCRs) scheduled for future release, with six deferred. The addition of the General Materiel and Petroleum Activity (GMPA) to the CCSS Stock Control FCG generated numerous urgent and routine SCRs as problems unique to GMPA surfaced and its new programs needed debugging. Even with the above turbulence, the FCG closed out the year with six deferred SCRs and 30 SCRs scheduled for out-releases.

All MSCs received and installed their large-scale computers and were running at least three cycles per day, with two MSCs running four or more. All MSCs completed the installation of their Local Area Network Systems (LANs) and their Reject Entry and Correction Technique (REACT) terminals and were pushing toward putting all rejects on them. Special emphasis was given to putting more controlled items on the Controlled Item Logic File (CLIF), and a new management report was developed and fielded to show how effectively the CLIF was being used.

Due to these efforts, in FY89 requisition processing time for high priority requisitions met the Uniform Military Movement Issue Priority System (UMMIPS) goal of a 1 day average for the first time in the history of AMC and the Army, with requisition processing time for low priority requisitions continuing to decline to 0.9 days from last year's 1.0 day. (As high priority items were frequently in great demand and required a management review before they could be issued, the processing time for high priority items was slower than that for low priority items which were machine processed.)

Phase I of the Supply Depot Workload Forecasting System was completed by SIMA with the development of a Financial Inventory Accounting (FIA) extract program and creation of a database accessible via natural language query. At Chambersburg, PA, SIMA installed lines and identified the type of personal computers and modems needed by the NICPs and depots to directly load the forecast database at Chambersburg. All NICPs and depots obtained the necessary hardware and identified PCs for use. Further enhancements would be made in FY90.

The automation of the Management Control Activities came to an abrupt halt in June 1989 when it was determined that the approach being pursued was too elaborate. A new approach was being discussed with the Office of the Secretary of Defense and the Department of the Army. Short-range interim measures were expected to be implemented in FY90, perhaps as early as March 1990.

Modifications To The Weapon System Supply Performance Analyzer (WS/SPA). In March 1989, modifications were made to the WS/SPA which would in the future enable the AMC MSCs to forecast individual stock availabilities for essential and nonessential items within the same weapon systems. The WS/SPA could already facilitate a two-tiered requirements determination process. Shortage cost parameters/Lambda values were in FY89 computed separately by the WS/SPA for essential items and nonessential items. The expected result of this modification would be a greater dollar investment in those items which heavily impacted readiness. Given sufficient time after implementation, this change was expected to cause a reduction in the number of Non-Mission Capable Supply (NMCS) requisitions processed at MSCs.

Incorporation Of SESAME Into the CCSS. In September 1989, the Selected Essential Stockage for Availability Method (SESAME) was incorporated into CCSS. SESAME was the only model approved by DA for computation of provisioning requirements. The SESAME process also included an automated interface to the Provisioning Master Record (PMR) data file, that is, the requirements computed by SESAME were automatically loaded into the k-card of the Provisioning Master Record. The CCSS version of SESAME also provided the capability to produce budget forecasts for up to 7 years in one computer run. The spare parts distribution could now be optimized for the entire range of end items within a given weapon system.

Maintenance Division

Aviation Classification Repair Activity Depot (AVCRAD). The Aviation Depot Maintenance Roundout Unit (ADMRU) Program was established under the National Guard Bureau in 1979 and subsequently assigned to AMC in 1981. It consisted of five units: one Mobilization AVCRAD Control Element (MACE) located in Havre de Grace, MD, and four AVCRADs located in California, Mississippi, Missouri, and Connecticut. The production of Aviation Intermediate Maintenance (AVIM) and depot level maintenance supported over 2,700 Army National Guard (ARNG) aircraft. AVCRAD personnel were trained to perform the mobilization mission including support to deploying forces, in-theater depot level classification and repair of critical aviation materiel, and back-up CONUS depot level repair of aviation items. Upon mobilization, the AVCRADs were to straddle the theater wholesale pipeline and return to service critical items by sending them back to using organizations.

An OCONUS facility was established at Brussels in FY86. The AVCRADs trained in this facility in 12 three-week increments annually. Each increment trained 10 people from Missouri; five from California; and five from Connecticut. A 30-man increment from Missouri also participated in REFORGER, a major exercise in Europe. This provided 270 people annually to OCONUS. During the past 2 years, the European AVCRAD progressed from a concept to a reality. The appropriate Table of Distribution and Allowances/Common Table of Allowance equipment and special tools were identified and requisitioned. Approximately 70 percent had been received, installed, and calibrated.

European AVCRAD personnel (both AVCRAD soldiers in overseas deployment training and Dyna Corp contract field team) have classified, repaired, and returned to the supply system in excess of 1,500 components, resulting in a cost avoidance of nearly \$2.2 million. European AVCRAD technical inspectors operating at the three Equipment Redistribution Facilities (ERFs) were recovering a significant number of aviation components that were either erroneously tagged as condition code H (unserviceable and uneconomical to repair), or were missing required historical data. Over 600 components with a value in excess of \$1.3 million were reclassified to condition codes A and F, or historical data was reconstructed to return items to condition code A.

Chemical Agent Resistant Coating (CARC). On 14 July 1988, the CG AMC and DA DCSLOG briefed the Chief of Staff of the Army on the results of the DA/AMC/TRADOC/TROSCOM CARC relook program. He approved the continuation of the CARC program and directed that publicity be increased in order to make the Army aware of the positive aspects of CARC. Two video tapes were produced and distributed to the field. Many *PS Magazine* articles, including a 16 page comprehensive article about spot painting CARC with a brush or roller, were published. CARC coatings were now lead and chromate free, which alleviated many of the health concerns previously associated with CARC.

U.S. Army Materiel Maintenance Management Intern Program. The central DA Materiel Maintenance Management Intern program was used to recruit, develop, and graduate high potential employees for Army-wide placement. Its primary objectives were to provide for a planned intake of personnel with high potential to meet DA-wide career program staffing needs and to provide employees with the knowledge, skills, and abilities required to advance to and successfully perform at the target level in a specific career program. Within AMC the program had 5,942 members, while its overall DA strength was 6,918. Of that total, minorities comprised 15 percent and women 11 percent. The current maintenance class was progressing very well and graduation would take place on/or about February 1990.

Army and Joint Oil Analysis Programs. The Army Oil Analysis Program (AOAP) started in 1961 as a result of oil analysis performed on Army aircraft experiencing problems with engines and transmissions. This initial analysis was performed by the U.S. Navy Oil Analysis Program. The first Army laboratory was established at Fort Rucker, Alabama, in September 1961. Eventually, analysis of oil from non-aeronautical equipment began on a test basis in 1967.

Subsequently, non-aeronautical equipment was entered into the program on a routine basis in February 1975. In April 1975, the General Accounting Office (GAO) performed a tri-service evaluation for a unified DOD effort to use oil analysis. As a result, at the Joint Logistics Commanders meeting on 23 September 1975 a joint agreement was approved to establish a Joint Oil Analysis Program Coordinating Group and a Joint Oil Analysis Technical Support Center (JOAP-TSC) at Pensacola, Florida. Individual service charters were written, and eventually a JOAP regulation dated 18 March 1980 was published.

During FY89 a number of significant accomplishments were achieved. One of them was the fourth quarter update of the AOAP Standard Data System software to version 4.3. This version had been developed to add type equipment codes (TECs) to separate field operating laboratories from depot type AOAP operations. Depot TECs were developed as a quality control tool for depot use only. The TECs identified components enrolled in the AOAP depot subsystem. These codes would provide capability to collect data on components as they went through quality assurance testing at the depot level. As data was collected through spectrometric analysis, wear-metal guidelines for rebuild/overhaul components could be developed that would establish new depot criteria in the future.

Another accomplishment was the 1 October 1989 establishment of new sampling intervals for nonaeronautical equipment enrolled in the AOAP. The new intervals put all combat vehicles on a 60-day interval, with all remaining equipment enrolled in AOAP on a 90-day interval. The operating hour intervals remained the same. The new intervals would be closely monitored and reevaluated after six

months. Sampling interval extensions would have a significant impact Army-wide, with a reduced burden on the soldier-in-the-field and a substantial dollar savings resulting from the reduced number of samples taken and analyzed.

During FY89, progress was made to clear several opened items from an FY87 AMC Inspector General inspection. Five recommendations remained and were expected to be completed by the end of FY90.

On 10 August 1989, Materiel Readiness Support Activity (MRSA) representatives deactivated the AOAP laboratory at the General Materiel and Petroleum Activity-East, New Cumberland Army Depot, Pennsylvania. All of its oil analysis functions were transferred to Fort Eustis, Virginia. The Fort Eustis laboratory was a government-owned, contractor-operated facility, operated by Analytical Services and Materiel, Inc., Hampton, Virginia, which was awarded the contract on 15 August 1989. The laboratory would support regular Army, Army Reserve, and National Guard units located in the states of Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and the District of Columbia.

In FY89, the AOAP ferrographic analysis capability expanded from 6 to 13 AOAP laboratories located throughout CONUS and OCONUS. In FY90 Army laboratories at Forts Bliss, Carson, Drum, Hood, Polk, Riley, Stewart, Eustis, and Ord were scheduled to assume the ferrographic analysis mission. Ferrographic analysis was routinely performed on AH-1 helicopters swashplates and scissors and sleeve assembly grease samples. Further testing was scheduled during FY90 to determine the feasibility of monitoring AH-64 helicopter intermediate and tail rotor gearboxes. In addition, it would be used to supplement spectrometric testing. Ferrography provided an additional means of enhancing equipment readiness, avoiding excessive maintenance, extending component life expectancy, and improving the overall maintenance program.

Theater Aviation Maintenance Program (TAMP). The Theater Aviation Maintenance Program was a joint AMC and USAREUR initiative to enhance aviation maintenance capabilities in Europe. The TAMP was part of the AVSCOM Directorate for Maintenance, which managed the contractors who provided maintenance support to Theater Aviation units. AVSCOM's acquisition plan, approved by HQDA on 11 February 87, had contained two contracts. The airframe contract was awarded to Agusta-Teamco, Belgium, in December 1987 and provided backup AVIM support. At the end of FY89 there had been 63 aircraft in work, and 129 aircraft have been completed as of 29 September 1989.

The components contract had been awarded to CASA, Spain, in September 1987. The contract provided depot level repair and overhaul of 42 selected line item components. A total of 290 overhauled components had been returned to the Theater. Four hundred eight were being worked at the end of FY89.

Modification Application Program. As recommended by the subject matter assessment of the Product Improvement Program/Materiel Work Order (PIP/MWO) process and as modified by the approval of Materiel Change Management (MCM) and the AAE/PEO concepts, AMC was changing the way it process changes to fielded equipment. The first step had been to publish an Interim Operating Instruction for MCM, which was a joint effort led by the HQ AMC DCSs for Supply, Maintenance, and Transportation and for Development, Engineering, and Acquisition. AR 70-15 and AR 750-10 were combined into one document, AR 70-15, which was in final draft form for staffing at HQDA. Staffing was expected to be accomplished during the second quarter of FY90.

A high turnover of key MWO personnel in the MSCs as well as austere travel funds severely impacted the orderly conduct of the MWO application program. However, the application program for the fiscal year totaled 125,200 applications, which was considered to be normal.

Transportation and Equipping Division

Army Materiel Loan Program. As the need for Army equipment by other DOD and federal agencies increased, the activity in this program also increased. FY89 saw a dramatic rise in the number of equipment loans being made to civilian law enforcement agencies for use in drug interdiction operations. As the number of loans increased, so did the number of delinquent loans. The MSCs' semiannual reporting requirements on delinquent loans were changed to quarterly to provide more timely management information. The status of delinquent loans was assessed on a continuing basis, resulting in an enhanced emphasis being put on the program by action agencies. The fourth quarter of FY89 reports indicated that impressive results were being made. Equipment loans were made to the Scout Jamboree held at Fort A.P. Hill on 2-8 August 1989 and to the United States Military Academy in support of the 1989 Cadet Summer Training.

Inventory Control Effectiveness (ICE). The ICE program achieved a major inventory variance rate of 7.3 percent, substantially below the DA/DOD ceiling of 10 percent. The major inventory variance rate was calculated by comparing the number of stock numbers with major adjustments (over \$800) to the number of stock numbers inventoried. Accuracy in the comparison of depot and inventory control point computer records decreased slightly to 95.9 percent, below the 97 percent Army goal, primarily due to implementation of the Commodity Command Standard System at the General Materiel and Petroleum Activity. The materiel release denial rate, at 1.2 percent, remained above the Army goal of 1 percent.

Maintenance of these accuracy levels was especially significant when one takes into account the declining P7S (Army supply program) resources. The impact of diminishing resources was apparent in on-time stowing and posting of receipts, at 68.1 percent (against the Army goal of 90 percent). Delays in receipt processing, combined with the high covered storage space occupancy rates at Area Oriented Depots (currently 94 percent), may continue to degrade future performance.

Logistics Applications Of Marking And Reading Symbols (LOGMARS). AMC-R 700-90, *Bar Coding Army Materiel*, was published on 16 October 1989, just after the close of FY89 and was distributed to item managers for implementation. It provided AMC sources of supply with guidance on which items which were to be bar coded and on which data elements were to be encoded on them. The data to be bar coded included national stock number/part number, serial number, and commercial and government entity code. Candidate items for bar coding included serialized, hazardous, controlled cryptographic, and reparable items. Corresponding implementing documents such as MIL-STD-130, *Identification of U.S. Military Property*, were updated to include bar code marking. Bar coding of Army hardware represented a new application under the LOGMARS.

A LOGMARS initiative which was completed in FY89 was the completion of the General Supply Inventory/Location Survey in June 1989, with 16 sites fully implemented. Targeted for completion by March 1990 were the General Supply Quality Assurance, General Supply Receipt Stowage, and Ammunition Inventory/Location Surveys. In addition, the prototype testing of the Non-Area Oriented Depot Shipping application was postponed to March 1990 due to nonconformance problems with the laser printers on the LOGMARS Nontactical Follow-On Contract.

Serial Number Tracking. Tracking of Category I nonnuclear missiles and rockets began 1 April 1989 in the DOD Small Arms Serialization Program (DODSASP) data base at AMCCOM. The goal was to have it all loaded by the end of the second quarter of FY90.

The transitioning of Controlled Cryptographic Items (CCI) from the COMSEC Materiel Control System (CMCS) to the standard logistics system had begun on 1 October 87. The target completion date for the transition was the fourth quarter of FY90.

Area Oriented Depot Modernization (AOD MOD). AMC's AOD MOD project was an effort to modernize the area oriented depots, which were responsible for shipping over 90 percent of Army-managed items, primarily Class IX repair parts, to our combat elements. This modernization program was to provide 3.7 million square feet of highly automated distribution facility space (not to be confused with storage space) which would enable the AODs to more rapidly distribute critical repair parts both in peacetime and during mobilization. This would improve materiel readiness during peacetime and promote faster response to repair parts requirements needed to return weapons systems to combat effectiveness during mobilization or wartime situations. Currently, the program consisted of three distribution centers utilizing two standard automation systems, which together were approximately 65 percent complete as of the end of FY89. Upon completion, this program would generate \$65 million annually in labor cost avoidance.

Support to the Southern Command (SOUTHCOM). SOUTHCOM activity intensified with the deployment of National Guard (NG) troops to the Honduras for training. AMC responded by establishing transportation procedures for support. All resupply was consolidated and palletized at New Cumberland Army Depot (NCAD), taken by truck to Charleston Air Base and flown to Palmerolo, Panama. Procedures were also established to build separate air pallets for the 228th Aviation Battalion. This measure was taken to allow the battalion to obtain its supply at Howard AFB, Panama, without going to the Consolidation Receipt Point (CRP) at Fort Clayton, Canal Zone. This reduced the in-country processing time for Air Line of Communication (ALOC) shipments.

In December 1989, the Secretary of Defense advised the Department of the Army that the President had notified Congress in August 1989 of his intent to exercise his authority under Section 506(A) of the Foreign Assistance Act to provide up to \$65 million of Emergency Military Assistance to Colombia. To support this effort, the DCS's transportation function, in conjunction with USASAC, provided daily liaison at the Pentagon with representatives from their services and DLA.

Additionally, AMC established two consolidation and containerization points (CCPs) for all Army sponsored shipments in support of the 506(A) effort. NCAD was the CCP for all of the air shipments, while Red River Army Depot (RRAD) was the CCP for all of the surface shipments through the New Orleans Port of Embarkation. Quality Assurance Teams from the applicable commodity command inspected the items at the point of containerization or, in the case of noncontainerized vehicles, at the port prior to loading. Legislation limited the use of the Presidential Declaration to 120 days after the August 1989 Congressional notification. The 120 days expired on 23 December 1989, terminating the program.

Direct Support System/Air Line Of Communication (DSS/ALOC). At the close of FY89 there were 1,005 recorded DSS units, of which 185 were ALOC units. This was a net increase of two over FY88. Additions to the system totaled 14: Europe--two DSS units; FORSCOM--nine DSS units; National Guard Bureau (NGB)--one DSS unit; Korea--one DSS unit and one ALOC unit. Deletions totaling 12: Europe--one DSS unit and one ALOC unit; FORSCOM--two DSS units; NGB--four DSS units; Korea--four ALOC units.

With a few exceptions, worldwide order ship time was generally higher than in FY88. The effects of resource cutbacks could be seen, to some degree, at all levels of the supply pipeline. Within AMC, depot processing and transportation hold time were an average of one day higher than in FY88 for all shipments processed. In particular, the effect of depot resource cutbacks and increased hold times to maximize shipment units was noticeably greater on CONUS shipment processing times. The relative increase in the latter was about half a day higher than for overseas shipments. Some improvement was seen, though, in the last quarter of the fiscal year.

The general increases in processing times, the bleak resource outlook, and the recognition that some DSS/ALOC objectives had never been met, raised the questions as to whether the Army could continue to afford the existing objectives and whether it could achieve economies by relaxing the objectives, particularly

in the case of ALOC. Consequently, the Army Materiel Systems Analysis Activity (AMSAA) was tasked in January 1989 to answer these questions.

Although AMSAA's study was not completed at year's end, preliminary findings were that: technological advances made since certain objectives were first established would allow some objectives (e.g., NICP processing) to be lowered; other objectives have proven to be too easily achieved and could be lowered (particularly for Korea); depot and transportation-oriented objectives should be increased if current funding remained constant or decreased; and increases in objectives would have minimal economic impact unless ALOC was discontinued entirely. The Army planned to staff the final study report with all MACOMs during the period from December 1989 to January 1990. AMC then would implement the changes to the objectives in AR 725-50 no earlier than April 1990.

At the end of FY89, the severity of funding cuts was further manifested when DA established FY90 funding levels and quarterly targets that included an initial 30 percent cutback in overocean air (ALOC included) cargo funds. A preliminary effort to reduce ALOC cargo in response to this cutback was a DA request to all MACOMs to identify units which could be taken off of ALOC with minimal resource/readiness impact. The initial response to this effort was universally negative.

For FY89, the Army's average annual performances (objectives in parentheses) for DSS and ALOC respectively were as follows: Europe (45 days/23 days) - 64.4 days/29.6 days; Korea (59/28) - 50.9 days/23.4 days; Panama (40/25) - 64.1 days/28.6 days; Hawaii (40/25) - 44.4 days/22.3 days; Japan (52/29) - 47.4 days/27.2 days; Alaska (42/26) - 44.3 days/24.4 days; TRADOC (20) - 24.4 days; FORSCOM (20) - 24.3 days. For DLA, the FY89 DSS and ALOC average order ship times were: Europe - 63.9 days/ 30.6 days; Korea - 52.1 days/26.8 days; Panama - 97.1 days/31.3 days; Hawaii - 46.1 days/26.7 days; Japan - 55.1 days/29.2 days; Alaska - 43.1 days/26.4 days; TRADOC - 25.7 days; FORSCOM - 26.2 days. Finally, GSA annual average OST figures were: Europe - 69.7 days/36.4 days; Korea - 59.8 days/35.4 days; Panama - 115.3 days/34.2 days; Hawaii - 65.0 days/48.6 days; Japan - 53.6 days/33.2 days; Alaska - 52.8 days/42.6 days; TRADOC - 29.7 days; FORSCOM - 31.8 days. Of the 14 performance measurements shown above for each of the supply sources, 13 were higher than FY88, a reflection of resource cutbacks.

The fourth quarter FY89 average dollar value of a day in the supply pipeline was \$51.7 million, 91 percent of which was for Army-managed items. Class IX (repair parts) comprised 39 percent of the dollar value requirements, followed by Class V (ammunition and missile parts) at 28 percent, Class VII (major items) at 25 percent, and all other Classes at 8 percent.

Overocean Transportation Funding. Due to shortfalls in funds for FY89 overocean Second Destination Transportation (SDT) and a projected shortfall of \$77 million for FY90, the Comptroller of the Army and DCSLOG established new requirements for MACOMs to monitor SDT that was obligated by the MACOM's initiation of shipments with an ultimate OCONUS destination. The new monitoring mission included monitoring the newly established Management Decision Packages (MDEP) and Military Standard Transportation and Movement Procedures (MILSTAMP) Transportation Account Codes (TAC) assigned to MACOMs and MSCs for use in implementing and tracking OCONUS shipments.

Although the projected FY90 shortfall was eliminated by a \$100 million increase from Congress, HQDA requested the MACOMs continue to track overocean SDT. HQDA included in the MDEPs quarterly obligation targets as well as the total SDT for FY90. Part of AMC's new mission was to be able to tell when the targets were being reached. If and when this occurred, AMC would alert HQDA to initiate a HQDA Transportation Work Group (TWG) to determine what could be done to get supplies to OCONUS requisitioners potentially impacted by AMC's projected inability to ship to them due to SDT shortfalls.

AMC tasked the Logistics Control Activity (LCA) to develop a software program to track the SDT costs by TAC, roll them up by MDEP and report to AMC and HQDA. The first LCA report was due January 1990, but would be limited to air mode. Surface was to come later. HQDA and the U.S. Army Finance and Accounting Center (USAFAC) reported that based on Transportation Operating Agency bills for FY90, as of 31 October 1989, 44 percent of the FY90 SDT had already been expended. HQDA called a technical working group to deal with the problem and AMC attended. Guidance from HQDA would be forthcoming and AMC would publish additional guidance to AMC field commands on their new responsibilities for tracking OCONUS SDT funding.

Electronic Data Interchange (EDI) For Defense Transportation. Implementation of the DOD-wide EDI technology continued with the start, by the Systems Integration Support Activity, of data mapping from the Standard Depot System to the DOD-approved transmittal sets. A market survey of mainframe EDI software vendors was completed, and competitive procurement for the software was to commence. Letterkenny Army Depot would be the DA prototype activity. The USAFAC implementation date for EDI was the second quarter of FY91.

Performance Oriented Packaging. Regulations and conventions of the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) pertaining to the international shipment of dangerous goods were to become mandatory on 1 January 1991. These new conventions would affect the way packages of dangerous goods were marked and would require packaging designs to be validated by performance testing. AMC's Packaging, Storage, and Containerization Center and the other Services' test facilities were testing packages and sharing information. Testing could also be contractually derived. Much remained to be done, and discussions with the MSCs and depots continued in order to ensure that Army was prepared for the 1 January 1991 implementation date.

Air Eligibility Codes (AEC). An Army Materiel Command Mission Area Analysis conducted in 1985 had concluded that the existing decision logic for movement by ALOC was satisfactory for peace time, but not for contingency operations. HQ AMC tasked AMSAA to review the current ALOC air eligibility codes for use during contingency conditions and conditions of limited airlift capability. The study was completed in April 1989. A proposed decision logic was established which would exclude those nonmission essential items from airlift in wartime when air cargo space was at a premium, and would allow for mission essential items that normally would move by surface. This logic was provided to and was resident at the Catalog Data Activity. It was used in the monthly Army Master Data File update and was available for use under contingency conditions.

Defense Transportation Tracking System (DTTS). DTTS was designed to provide real-time tracking and communications using commercially available satellite monitoring. Currently, only shipments of CAT I (man-portable missile/rockets) were required to use DTTS. Cost evaluations were being prepared prior to extending DTTS to other categories. The system provided truck location reports and emergency situation notification. The 24-hour manned DTTS center was located at the Navy Material Transportation Office, Norfolk, Virginia.

Restricted Items. In FY89 there were 26 federal stock numbers on the restricted items list. These were items that because of their unit weight were restricted from routine airlift. HQ AMC, with assistance of the Logistic Control Activity (LCA), tasked the AMC Catalog Data Activity to provide a list of Air Eligibility Code (AEC) 1 and 3 items exceeding the established unit weight. These items might qualify for inclusion on the restricted items list and routinely move by surface. This would reduce Second Destination Transportation funds expended for movement.

Conversion Of Packaging - The Basics Booklet. *Packaging-the Basics*, initially published in 1986 by the Packaging, Storage and Containerization Center, was distributed to thousands of users worldwide. A third revision to the document was prepared in 1989, thus assuring accuracy of the information

provided. Articles endorsing the booklet and advising of its availability and content appeared in numerous military publications throughout the year.

This booklet was in an easy-to-read format and served as a guide for the soldier in the field involved in the packaging of retrograde and other materiel. With major emphasis being placed on the Army's materiel repair/return programs, it was determined that wider dissemination of the booklet would serve Army needs by enhancing the mission readiness of AMC commands, DESCOM depots, and troop installations. This decision was supported by the findings of an AMC Inspector General Systemic Inspection of Packaging, Handling, and Storage Operations. The informal publication status of the booklet was to be transitioned to official publication status in FY90 as a technical manual, field manual or supply bulletin.

Break Bulk Point (BBP) Assignment. Army BBP assignments have resulted in over 9,000 BBPs in the DOD Activity Address File (DODAAF). HQ AMC requested a review by each Command of all DOD Activity Address Codes (DODAAC) on the file in order to take action to change, delete, or add as necessary to update the file. Many of the units were using their own DODAAC as a BBP in lieu of the Transportation Distribution Point or the Central Receiving Point on their installation. Review was underway and changes were being made in accordance with regulations.

DOD Military Packaging Simplification Study (MPSS). The MPSS was completed in May 1989 and was approved by the Joint Packaging Coordinating Group (JPCG) at its July 1989 meeting. The recommendations included revision of four policy-type documents and 98 "packaging of" type documents; elimination of five submethods of preservation and the redesignation of the remaining methods/submethods; consolidation of MIL-P-116 and MIL-STD-2073-1; restructuring of MIL-STD-2073-1 and MIL-STD-2073-2, including elimination of one entire table of codes and deletion of 197 individual codes; elimination of detailed packaging from Commodity Specifications; standardization of DOD's computerized packaging applications; and implementation of a modified system for development/entry and storage/output of coded packaging. The Chairman of the JPCG briefed the Office of the Assistant Secretary of Defense (OASD) in November 1989. The briefing was well received, and a memorandum would be forthcoming from OASD to the Service Secretaries and DLA directing implementation of recommended actions.

Special Programs Office

Intermediate Range Nuclear Force (INF) Treaty Status. The INF Treaty between U.S. and USSR was signed 8 December 1987 and implemented on 1 June 1988. It required that U.S. PERSHING Ia and PERSHING II missile systems be returned to the U.S. and then eliminated. The first CONUS elimination began in September 1988. On 6 July 1989 the last Ia rocket motors were eliminated at Longhorne Ammunition Army Plant (LHAAP). A total of 343 Ia missile stages, one Ia erector launcher, and 71 Ia training stages were eliminated in accordance with INF Treaty. Elimination of PII missile stages, PII erector launchers, and PII training stages were to continue at LHAAP and Pueblo Depot Activity through May 1991. Until the last battery stood down in FY91, PII readiness would be maintained.

Lance Missile System. The refurbishment of the missile propulsion system, by Anniston Army Depot, continued during 1989 at the rate of 36 missiles per month. The refurbishment program had been started in 1986 and was necessary to remove sludge which was caused when the oxidizer stored on board reacted over the years with the aluminum fuel tank. The sludge blocked orifices in the system, which in turn caused flight guidance and termination problems. A similar NATO effort, necessitated by the same problem, was ongoing at the Royal Ordnance Factory (ROF), Bishopston, Scotland, for NATO-owned assets.

On 7 June 1989, the 1000th successful firing of a LANCE missile was done by the German Army. That firing also certified acceptance of the first production lot of ROF refurbished missiles. Another missile successfully fired by the German Army on 14 June 1989 certified the second lot of ROF production.

The Chief of Staff of the Army, in 1984, approved a Service Life Extension Program to extend the life of the aging LANCE through 1995. That program remained on schedule throughout 1989 and was still scheduled for completion during FY92. Several significant events occurred in 1989 that indicated progress within the program. They included the award in July 1989 of a production contract for a redesigned and flight proven nuclear warhead timer to Harris, Inc.; the first production (375) of a new accelerometer was installed and subsequently a new production contract was awarded in December to Sundstrand Corporation for the balance of the requirement; and two Monitor Programmers (special inspection equipment) for Army and one for NATO were delivered during the final quarter of 1989. In addition, a Proof Of Principle effort, by Hamilton Standard, to determine if gyroscopes could be refurbished continued with six bench models being completed during 1989, and have gone/are going through various testing with some degree of success.

A previously approved Product Improvement Program authorized the conversion, starting in FY90, of M251A1 Conventional Warheads into inert practice warheads for use in Annual Service Practice Firings of the Lance missile. That program was necessary because of the dwindling inventory of M252 practice warheads needed to simulate firings of nuclear warheads. In March 1989, HQDA approved a request by AMC's Missile Command and by the DCS's Special Projects Division to start conversion during FY89, and 18 warheads were processed this calendar year. The explosives removed during this process were used by the Project Manager for the Army Tactical Missile System (PM-ATACMS) to load warheads for use in testing that missile.

Action Officers Workshop for Petroleum Distribution System. The Action Officers Workshop (AOW) 17 was held at Fort Belvoir, Virginia, on 12 to 13 December 1988. The purpose of the workshop, initiated in July 1983 under General Officer Steering Committee guidance, was to improve the Army's petroleum distribution capability.

Over the years since the first workshop was held in August 1983 at Fort Story, Virginia, the growth and accomplishments have been impressive. Detailed equipment and facilities data for the Southwest Asia Petroleum Distribution System Operational Project (SWAPDOP) Inland Petroleum Distribution System (IPDS) had been established; participation increased from 10 organizations to over 25; the IPDS was successfully tested and was in production; distribution plans were now nearing completion, and a Logistics Civil Augmentation Program (LOGCAP) contract was in place for SWAPDOP IPDS areas 1 and 3. Hundreds of individual actions and tasks had been accomplished to support the development, testing, and acquisition of capabilities which were only ideas five years before.

JP8 Demonstration Program. The JP8 Demonstration Program, initiated by HQ AMC Special Programs Office, and monitored by the Materials, Fuels, and Lubricants Laboratory, Belvoir Research, Development, and Engineering Center, was in support of the Department of Defense plan to convert all diesel-consuming vehicles and equipment in NATO to JP8 (jet petroleum) fuel (NATO Code F-34). The demonstration program, in operation since 1 February 1989 at Fort Bliss, Texas, and scheduled for one year, was proving that the concept of a "Single Fuel on the Battlefield" was viable and attainable.

Water Resources Management Action Group. In accordance with DOD Directive 4705.1, *Management of Land-Based Water Resources in Support of Joint Contingency Operations*, 11 October 1983, the Army was designated the DOD Executive Agent for land-based water resources. In addition to other executive agent duties, the DOD directive established a Water Resources Management Action Group (WRMAG), which coordinated and resolved joint water support issues. Meeting number 13 of the WRMAG was held on 16 to 18 May 1989 at the Belvoir Research, Development and Engineering Center. The Services and many agencies attended. Major developments included placement of 300K gallons per day Reverse Osmosis Water Purification Unit (ROWPU) barges aboard the semi-submersible barge; modification of requirements for hand-held individual/small unit water purification devices; continuation of the 600 Gallon Per Hour (GPH)

ROWPU programs; and publication of the Joint R&D Master Plan to eliminate duplication of effort in the services.

Bradley and Abrams Systems Upgrades in CONUS Depots. AMC assumed responsibility for performing upgrades on Bradley Fighting Vehicle Systems (BFVS) and Abrams Tanks Systems from USAREUR in December 1987 and March 1988, respectively. The upgrades were being performed in accordance with -10 and -20 series technical manuals at depots in CONUS. The BFVS upgrades were performed at Red River Army Depot, Texas, and the tank upgrades were performed at Anniston Army Depot, Alabama. The upgrade program was shifted to CONUS in order to relieve USAREUR of maintenance responsibilities that did not directly benefit readiness, theater reserve stocks, nor reduce manpower available for general support repairs. In December 1988, the Vice Chief of Staff, Army, decided that the performance of unit level maintenance in the depots would be terminated with the completion of the FY89 programs. By the conclusion of the upgrade programs in the depots, a total of 500 BFVS and 584 tanks would have been upgraded.

APACHE Program Status. The first APACHE production delivery had occurred on 26 January 1984. To date, 534 APACHES had been accepted by the Army, with 513 fielded to AH-64 battalions. Sixteen battalions had been fielded and one was in training (14 were COBRA battalions transitioned to the AH-64 and 3 were new AH-64 activations). During FY89, there were two severe weather storms that damaged AH-64 aircraft at Fort Hood, TX, and Columbia, SC. Expedited supply and maintenance actions returned to flyable status 63 of the 111 damaged APACHES at Fort Hood and five of the nine damaged South Carolina Army National Guard helicopters. Repair work would continue on the remainder of the damaged equipment.

Mobile Subscriber Equipment (MSE). Fielding the MSE to III Corps units at Fort Hood accelerated in FY89. After fielding the first MSE coherent unit set (CUS) in FY88, three additional MSE CUS's were delivered during FY89. GTE was the prime contractor for MSE; however, AMC participated heavily by executing the Total Package Fielding of MSE DELTA items. The MSE DELTA were the new and increased items of equipment generated by MSE Signal Battalion unit conversions and activations. All fieldings had been successful and the equipment had been well received by the troops. MSE III Corps fieldings were to continue into FY90, and V Corps fieldings were to start in FY90.

Office of the Deputy Executive Director for Test, Measurement, and Diagnostic Equipment

Organization

The Deputy Executive Director for Test, Measurement, and Diagnostic Equipment (TMDE) throughout the year was Robert K. DuBois. The organization had 14 civilian spaces authorized throughout the year.⁶

Major Issues

The most significant issues handled by the office in FY89 were the classification of approximately 700 civilian metrology and calibration Technicians to GS-802 engineering technicians; the publication of

⁶Unless otherwise noted, this information in this section was taken from the Office for TMDE Management AHR submission for FY89 and from the inclosed FY89 AHR submissions of the two separate reporting activities that reported to it - the US Army TMDE Support Group (USATSG) and the US Central TMDE Activity (USACTA).

revised AR 750-43, *Test, Measurement, and Diagnostic Equipment (TMDE)*; revision and publication of MIL-HDBK-52B, *Evaluation of Contractor Calibration System*; as well as changes and accomplishments in the DOD metrication program.

Classification of Metrology/Calibration Technicians

In September 1988, AMC completed its classification and consistency review of TMDE calibration positions and forwarded a report to the Office of Personnel Management (OPM) for their final review and decision. The AMC report concluded that calibration and certification of TMDE was a parascientific/subprofessional engineering field of work, and that the Test, Measurement, and Diagnostic Equipment Support Group technicians were functioning as metrology engineering technicians. The report further proposed new benchmark job descriptions for a "Metrology Technician" to be coded to the GS-802 Engineering Technician Series. This initiative capped a four-year effort to standardize all of the approximately 700 civilian metrology/calibration positions within the U.S. Army TMDE Support Group (USATSG) in a single pay plan and series.

In October 1988, OPM responded that since AMC's report satisfied OPM consistency requirements, that is, all positions (calibration technicians) surveyed by AMC were found to be General Schedule employees, the consistency case was closed. In October 1989, a memorandum of understanding was put into effect between the MICOM Civilian Personnel Office (CPO) and USATSG which centralizing position classification authority with the MICOM CPO. Conversion to the new metrology technician job descriptions was to begin in November 1989 and it was anticipated that it would be completed in 1990.

Publication of Revised AR 750-43

Revised AR 750-43, *Army Test, Measurement, and Diagnostic Equipment Program*, was published on 29 September 1989. This revision consolidated AR 750-43 and AR 750-25 into a single document. In order to better follow the management structure of the Secretary of the Army Charter for the Army's TMDE management structure, it more closely followed the wording of the charter and included in chapter 1 of the AR a condensed summary of the responsibilities of the DA TMDE Executive Agent. Chapter 1 also clarified the fact that radiation detection, indication, and computation as well as precise time and time interval devices were TMDE items. Changes in chapter 2 strengthened requirements for the early identification of TMDE needs and support requirements and provided additional guidance to improve the quality and reduce the quantity of TMDE in the inventory.

A chapter 4 was added to address automatic test equipment and test program set policy. The policy was oriented towards standardizing hardware and software and minimizing proliferation. In chapter 5 the guidance concerning the DA TMDE Preferred Items List (PIL) (DA Pamphlet 700-21-2) was changed to limit the Special Application PIL to items not qualified for the Army PIL.

Chapter 6 established goals to achieve the Army TMDE Calibration and Repair Support Program objective. At least 95 percent of the TMDE in the inventory was to be available to the user and the TMDE owner/user delinquency rate was to be 3 percent or less. This chapter also modified the U.S. Army TMDE Support Group quality assurance and inspection program to satisfy nuclear surety concerns and expanded the program to include assessment of customer satisfaction. A further change in chapter 6 was the elimination of the requirement to designate in writing the TMDE support coordinator.

Revision and Publication of MIL-HDBK52B on the Evaluation of Contractor Calibration System

In June 1989, a final meeting was held between the Army, Navy, Air Force and the Defense Logistics Agency for the purpose of finalizing MIL-HDBK-52B on the evaluation of contractor calibration systems. A complete revision of the MIL-HDBK had become necessary for it to track successfully with the recently

published revision to Military Standard-45662A, *Calibration Systems Requirements for Industry*. The handbook was an informational guide intended to provide the Government representative with an expanded understanding of each MIL-STD-45662A requirement and to assist in providing for the uniform evaluation of the contractor's compliance with the individual requirements as they applied to the contract. This publication would supersede the 17 August 1984 MIL-HDBK-52A.

Changes and Accomplishments in the DOD Metrication Program

In January 1989, DOD published a metric transition plan with 16 specific task areas requiring metric conversion, such as logistics, education and training, specifications and standards, construction, etc. The Executive Director for Test, Measurement, and Diagnostic Equipment was designated as the office of primary responsibility for DOD Metric Task 11, TMDE. A Joint Technical Coordinating Group for Calibration and Measurement Technology (JTCG-CMT) subgroup for TMDE metrication was established, with its charter being approved in October 1989. In August 1989, the TMDE metrication subgroup met for the first time. Offices of collateral responsibility from the Army, Navy, and Air Force were present along with representation from the National Institute for Standards and Technology and the private sector (National Conference of Standards Laboratories).

A plan of action with milestones was developed to facilitate the implementation of DOD Metric Task 11, and the milestone schedule was forwarded to the Office of the Secretary of Defense on 15 September 1989. The plan included a format for reporting metric augmentation or conversions using correction factors applicable to metrology standards. It was anticipated that the collection and analysis of TMDE and metrology standards metric needs would take approximately 18 months to complete. By early CY91, AMC should have a good assessment of the metrology metrication requirements and related costs.

U.S. Army Central TMDE Activity (USACTA)

Organization. USACTA was commanded throughout the fiscal year by COL Herbert L. Lawson, who had assumed command on 15 September 1988. Its manpower authorization throughout the year was two military and 56 civilian spaces.

The Commission on Base Realignment and Closure (BRAC) listed USACTA as a Transfer of Function to Redstone Arsenal, Alabama. Plans were made to integrate at least 31 of the USACTA authorized TDA spaces into the TMDE Support Group TDA to continue the mission currently assigned to USACTA. The date of the actual transfer was as yet unpublished. Some initial planning for the transfer had begun and would continue in order to accomplish this change with the least possible impact on personnel and mission accomplishment.⁷

Major Issues. The two major issues dealt with by USACTA in FY89 were TMDE acquisition management and TMDE systems and field support.

TMDE Acquisition Management in FY89. In accordance with the tasking outlined in the DOD Test Equipment Management Program (TEMIP), during FY89 USACTA chaired a subcommittee composed of electronic test equipment managers from the military services and DOD agencies. A DOD Consolidated Electronic Test Equipment Listing (DODCEL) containing 60 items of general purpose electronic test equipment with open contracts was published and distributed to DOD activities in July 1989. DOD attendees at the April 1989 meeting reported a savings in excess of \$6.4 million over the past two years through the use of joint/consolidated test equipment procurements. The Army spectrum analyzer

⁷See a further discussion of this under the Base Closure and Realignment portion of the Test, Measurement, and Diagnostic Equipment Support Group section below.

requirements were recently added to a newly awarded Navy contract and savings of approximately \$200,000 were realized when Navy agreed to include Army ILS requirements as a separately priced option.

During FY89, the Acquisition Management Branch processed 718 acquisition requests with a total quantity of 47,364 items. This represented a total value of \$200 million from 62 different requesting agencies. Of the 718 requests received, 107 were for Preferred Items List/Test Equipment Modernization (PIL/TEMOD) items, 155 were for other TMDE type classified (TC) Standard LCC-A, and 187 were for PIL Addenda items. These figures indicated that more emphasis was being placed on TMDE standardization by the requesting organizations. Out of the 692 approvals given, 466 (67 percent) were for registered TMDE versus 226 (33 percent) nonregistered. Through USACTA's management of the TMDE program, proliferation and duplication of TMDE was being reduced and TMDE standardization was being reinforced and improved.

The Acquisition Management Branch was in the midst of a major purge of the DA TMDE Register during FY89. A total of 68 percent of the register items were reviewed and 1,013, or 37 percent of these items, were purged and placed in the inactive files. This purge would result in a more viable and useful TMDE Register for the Army.

Support Division. The Support Division reviewed and evaluated 435 Integrated Logistics Support documents to assure that TMDE (including automatic test equipment hardware and software) was adequately addressed, for a potential cost avoidance of \$1 million. It participated in 73 on-site visits which generated 346 TMDE issues and concerns, as well as provided assistance and guidance to program executive offices and program managers, other materiel developers and field users. It supported other mission related goals and objectives for a potential cost avoidance of \$1 million.

The division processed 22 automatic test equipment waivers for PMs desiring to use test equipment other than the Army standard Integrated Family of Test Equipment. The anticipated acquisition cost for acquiring these systems was approximately \$50 million.

The Review of Equipment Specifications and Organizational Requirements for TMDE project continued its effort to purge 12 non-utility items of TMDE from the Army inventory. A list of current candidate items was ongoing. Development of Army-wide procedures continued. This project had the potential to provide a cost avoidance of millions.

The Test Equipment Clearing House for Technical Assistance and Logistics Know-How program had 25 queries submitted by TMDE users, with 26 issues identified and answered within two days for a potential cost avoidance of \$25,000. Support was also provided to the Deputy Executive Director for TMDE on numerous studies.

Resources Management Division. USACTA, under the direction of the Executive Director for TMDE, continued to publish DA Technical Bulletin (TB) 43-0001-61-Series, *Equipment Improvement Report (EIR) and Maintenance Digest TMDE*. This TB disseminated technical information concerning TMDE activities to field units and higher commands. The latest edition was dated April 1989.

Test, Measurement, and Diagnostic Equipment Support Group

Organization. The U.S. Army Test, Measurement, and Diagnostic Equipment Support Group's (USATSG) FY89 manpower authorization as of 30 September 1988 was 22 officers, 37 warrant officers, 925 enlisted personnel, 1,256 civilians, and 88 indirect hire local nationals. Adjustments during the fiscal year included Headquarters Department of the Army reduction of one warrant officer position and an increase of one civilian position for foreign military sales administration.

USATSG's operating budget for FY89 totaled \$102.292 million, including \$5.110 million in prior year funds. The funds came from a number of different accounts, as shown below:

TABLE IV-6
USATSG Budget
(in \$M)

	OPA	RDTE	OMA	OMAR	FMS	Total
Army	26.860	1.258	54.713	1.400	2.176	86.407
Customer	.350	.400	15.135			15.883
Total	27.210	1.658	69.848	1.400	2.176	102.292

Source: USATSG FY89 Historical submission included in the FY89 submission of the Office of the Deputy Executive Director for Test, Measurement, and Diagnostic Equipment.

USATSG completed a significant reorganization with the establishment of its Engineering Directorate on 23 April 1989. Under the model installations program the Commander, USATSG, was given the authority to approve and implement organizational changes and functional realignments within and between second echelon organizations. The reorganization was accomplished within existing USATSG resources by supplementing existing engineering authorizations with authorizations diverted from lower priority missions. The result was a total of 47 authorized spaces dedicated to the new Engineering Directorate: 21 from the Systems Engineering Division, Metrology Directorate; 14 from the Metrology Directorate laboratories; 3 spaces saved from previous reorganization; 1 space from the Operations, Policy and Readiness Division; 2 spaces from the Operations Research Division; and 6 spaces from the U.S. Army TMDE Support Activity-CONUS. The organization/authorization for the new directorate was as follows:

TABLE IV-7
Engineering Directorate Manpower Authorization

	Required	Authorized
Office of the Director	2	2
Electronics Engineering Division	14	14
Physical Engineering Division	8	8
Systems Engineering Division	12	12
Engineering, Development, Test and Evaluation Division	23	11
Total	59	47

Source: USATSG FY89 Historical submission included in the FY89 submission of the Office of the Deputy Executive Director for Test, Measurement, and Diagnostic Equipment.

The Engineering Directorate was established to overcome the current metrology technology gap by having USATSG personnel working directly with those Army scientists who were experimenting with new technology applications which might produce calibration requirements in the future. It was anticipated that this early identification of new technology would accelerate solutions to potential calibration standards development problems. The new engineering organization also directed more engineering capability to procurement problems associated with modernization of our laboratory equipment and set components. Finally, it provided more attention to field metrology engineering problems which existed in the laboratories that supported AMC research and development centers, test ranges, and depot missions. In addition, through job re-engineering and application of the equipment development grade evaluation guide, USATSG was successful in establishing a journeyman grade of GS-13 for professional engineering and physical science positions. Thus, twelve additional GS-13 positions were established, along with three additional GM-14's and one GM-15 managerial position.

Concurrent with establishment of the Engineering Directorate, the Metrology Directorate was redesignated as the Army Primary Standards Laboratory (APSL) Directorate. The APSL Directorate was subdivided into the Physical Standards Laboratory, the Electrical Standards Laboratory, the Microwave Standards Laboratory, and the Radiation Standards and Dosimetry Laboratory. The Radiation Standards and Dosimetry Laboratory performed all the missions of the former Radiation Standards and Development Laboratory. It assumed managerial responsibility for the Army Ionizing Radiation Dosimetry Center located at Lexington Bluegrass Army Depot and assumed the mission of the primary nucleonics laboratory from the Area TMDE Support Center Sacramento.

A follow-on realignment transferred production control, shipping and receiving functions to the Army Primary Standards Laboratory Directorate. A separate organizational element, the Production Control and Shipping Division, was established 23 May 1989. This organizational change was aimed at correcting an overlap in functions assigned to the Logistics and APSL Directorates. Six spaces were transferred from the Logistics Directorate to effect the realignment. A summary of the Army Primary Standards Laboratory Directorate is included in TABLE IV-8 below.

TABLE IV-8
Army Primary Standards Laboratory Directorate Manpower

AUTHORIZED		REQUIRED
2	Army Primary Standards Laboratory Office of the Director	2
7	Production Control and Shipping Division	7
15	Electrical Standards Laboratory	16
14	Microwave Standards Laboratory	16
25	Physical Standards Laboratory	30
36	Radiation Standards and Dosimetry Laboratory U.S. Army Ionizing Radiation Dosimetry Center	39
113	TOTAL	125

Source: USATSG FY89 AHR submission included in the FY89 submission of the Office of the Deputy Executive Director for Test, Measurement, and Diagnostic Equipment.

Significant Issues. The most significant issues handled by the support group in FY89 included base closure, transfer of proponency for enlisted Military Occupational Specialty (MOS) 35H and warrant officer MOS 252A, and value engineering.

Base Closure and Realignment. The USATSG annex to the Army's base closure and realignment plan was completed and submitted to AMC and appropriate major subordinate commands. The overall plan was required because the closure of Lexington and Pueblo Army Depots, the Army Materials Technology Laboratory at Watertown, Massachusetts, and Jefferson Proving Ground created the need to relocate the TMDE support facilities at these sites. The USATSG plan involved relocation of four laboratory facilities and 106 USATSG personnel. Additionally, the U.S. Army Central TMDE Activity (USACTA) located at Lexington Bluegrass Army Depot would be relocated to Redstone Arsenal and combined with the USATSG. The USACTA personnel spaces would be reduced from 58 to 31. Personnel occupying the 27 eliminated spaces would be offered transfer of function rights to Redstone Arsenal, Alabama.

Transfer Of MOS Proponency. Transfer of combat development proponency to the Ordnance Corps was completed as of October FY89 for enlisted MOS 35H (TMDE Support Specialist) and warrant officer MOS 252A (Calibration Technician). USATSG currently had a faulty standard of grade authorization. Intensive USATSG work on the issue based upon the establishment of a separate career management field 35 containing career progression opportunities in USATSG was successful in obtaining Department of Army approval to halt application of the faulty standard of grade authorization pending development of an improved version. This moratorium prevented the downgrading of over 130 staff sergeants (E6) and above MOS 35H positions to E4 and below.

Assimilation of Warrant Officer (WO) MOS 252A into the Ordnance Corps was also accomplished effective 30 June 1989. As of 1 October 1989 the MOS would be changed to 918A to more clearly identify Ordnance affiliation. Both of the above MOS transfers were accompanied by "star notes" from Chief of Ordnance, BG James Ball to all MOS 35H and 252A soldiers.

USATSG hosted a Critical Task/Site Selection Board during 11-21 July 1989. Representatives from each USATSG element (CONUS and OCONUS) were assembled to map out a radically new training strategy for advanced individual training, basic noncommissioned officers course, advanced noncommissioned officers, advanced calibration laboratory course, and the Army correspondence course program. The Board consisted of selected personnel from Lowry Air Force Base, Colorado, a representative from the Soldier Support Center and representatives from U.S. Ordnance Missile/Munition Center and School (OMMCS). The Board's results would provide a framework for OMMCS as it prepared to assume training proponency responsibility as of 1 October 1990.

Value Engineering. USATSG had savings of approximately \$3 million from two value engineering proposals. One action proposed revised calibration procedures for digital test, measurement and diagnostic equipment. This proposal was estimated to save in excess of \$600,000 annually from the reduction in time required for performance of calibrations. The other proposal addressed an alternate means of procuring five items of hardware required by USATSG. As a result of this proposal, funding was provided to other Government agencies to exercise contract options that satisfied the USATSG needs. This avoided the initiation of separate contractual actions for the items, and resulted in a savings of over \$2 million from the original programmed cost of the items involved. This method of procurement also reduced the procurement leadtime and the contract execution and program management costs.

Modernization Of AN/GSM-286 And AN/GSM-287. Exceptional progress was made in the transfer set modernization program during FY89. The core workstation was to provide measurement capability for calibration of the Army's DC low test equipment. It would replace items of insupportable equipment and would in addition add new capabilities. Although the core workstation contract with Valhalla Scientific, Inc., was terminated for default, it was reawarded to the original second low bidder, the John Fluke

Manufacturing Company on 15 September 1989. The unit cost for the core workstation was \$24,000 and the total cost of the contract was \$5.8 million. First article delivery was scheduled for 15 March 1990 and production delivery was to begin in January 1991.

The signal generator workstation would provide signal generation calibration capability through 18 gigahertz. It would replace three items of equipment which were either insupportable or no longer adequate and in addition would add new capabilities. The contract for it had been awarded in September 1988 to Harris Corporation for a unit price of \$29,000 and a total contract cost of \$6.7 million. The first article delivery was received on 28 June 1989, and first article tests were begun. Production delivery was to begin in February 1990.

The oscilloscope calibrator workstation would provide sourcing capability to calibrate the Army oscilloscopes and would replace two items of equipment that were either at the end of their useful life or were unable to support current equipment. The contract was awarded to Tektronix, Inc., on 28 September 1989 for a unit cost of \$21,414 and a total contract cost of \$6,099,142. First article delivery was scheduled for March 1990 and production delivery was scheduled to begin in January 1991.

Several additional modernization items were acquired either from other services through the MIPR process or from the TEMOD program. A major effort was successfully completed during this period on the specifications for the oscilloscope calibrator by coordinating the requirements and making the procurement a joint procurement for all three services. The tri-service acquisition initiatives for FY89 included the following:

TABLE IV-9
Tri-Service Calibration Acquisition Initiatives

Oscilloscope Calibrator
Joint Service Specifications
Indefinite Quantity up to 600
Digital Multimeter (8840 H/AF)
Air Force MIPR
Quantity of 231
Analog Oscilloscope (TEK 2465B)
Air Force MIPR
Quantity of 236
40 GHZ Microwave Counter (HP5352B)
Navy MIPR
Quantity of 70
Radar Test Set (AN/UPM149)
Navy MIPR
Quantity of 69

Source: Briefing slides included in the Deputy Executive Director for Test, Measurement, and Diagnostic Equipment AHR submission for FY89.

In addition, in FY90 a tri-service acquisition of 125 spectrum analyzers (HP 8562/W40 GHZ) was anticipated.⁸

U.S. Army TMDE Concept 2000 Symposium. USATSG sponsored a technical symposium on 15-16 June 1989 at the Hilton Hotel in Huntsville, Alabama. The symposium, which was very successful, was attended by over 170 technical representatives from across the United States and several foreign countries. Planning for the symposium had begun in December 1988 at the request of COL George E. Patch, USATSG commander, and a call for papers had gone out in January 1989. Several thousand requests for papers were mailed out, and from the responses a technical program was developed. It consisted of five or six papers in each of the sessions on Electrical Metrology and Automatic Test Equipment, Physical Dimensional Metrology, Microwave Metrology, and General Metrology-Automatic Test Equipment.⁹ Following the completion of the program, 7,000 copies of it were mailed out nationwide, using various technical society mailing lists. The proceedings, in the form of papers presented by each speaker, were distributed to each attendee. In conclusion, even though the symposium required a great deal of concerted effort, it was easily the largest such undertaking in USATSG'S history and was enjoyed by all.

Awards. Through the coordinated efforts of USATSG Headquarters personnel, four USATSG elements received awards for excellence in supply and maintenance. The Area TMDE Support Team (ATST 82/16), Fort Bragg, North Carolina, was selected by AMC for the Award for Maintenance Excellence, Light Category; the 524th Maintenance Company (TMDE) was selected for the Award for Maintenance Excellence, Heavy Category; and TMDE Support Center-Picatiny was selected runner-up for the Award for Maintenance Excellence, Intermediate Category, TDA. The 2d Maintenance Company (TMDE) was selected by AMC as winner of the Supply Excellence Award for AMC and represented AMC in the DA competition.

TMDE Supportability. The USATSG issued 81 statements of TMDE supportability to the various fielding commands during FY89. Although this was not all inclusive of the fielding that occurred in FY89, it did represents well over a 100 percent increase in TMDE supportability from the 35 such statements issued in FY88. This increase was due in part to the publication of the AR 700-142, *Materiel Fielding, Release, and Transfer*, which led to a greater awareness on the part of materiel developers of the need to obtain the TMDE support statement; in part to the efforts of the ILS action officers for TMDE support statements; and in part to the increased communication between the USATSG and other commands as well as supporting USATSG units/activities.

USATSG personnel attended 57 ILS Management Team meetings, 10 logistics support analysis reviews, 20 in-process reviews, and 13 other conferences and working group meetings in other command areas. The USATSG hosted the first USATSG ILS management teams meeting at Redstone Arsenal, AL, in January 1989. As a result of that meeting, the Program Manager of the Target Acquisition Designation Sight/Pilot Night Vision Sensor (TADS/PNVS) agreed to fund for organic support products. This funding approached \$800,000. The USATSG expected to reach a major milestone in October 1990 with full organic support of APACHE electro-optic bench TMDE both in CONUS and in Europe. The coordination efforts with the U.S. Army Intelligence and Security Command (INSCOM) resulted in INSCOM procuring equipment for the USATSG to support their unique 40 GHZ and optics requirements.

PM, Test Equipment Modernization. The Product Manager, Test Equipment Modernization (PM-TEMOD), placed unresourced and increased workload requirements on the USATSG. Processing and

⁸Briefing slides included in TMDE submission for FY89 AHR.

⁹See schedule for U.S. Army Test Technology and Calibration Concept 2000 Symposium, in TMDE AHR submission for FY89.

coordinating program management documentation, conducting facility of use tests, and technical publication verifications on TEMOD items required over two manyears of effort. Only one statement of TMDE supportability, for the ME-545/G RMS voltmeter, was issued to PM-TEMOD, and three expected fieldings (SG-1207, AN/USM-608, and the AN/USM-485) were temporarily halted by the USATSG because of the lack of ILS product development.

Depot Liaison. As part of its liaison with U.S. Army Depot Systems Command (DESCOM), the USATSG provided data requirements for depot equipment contracts and for equipment not listed in TB 43-180. In addition, initial coordination was accomplished on USATSG and DESCOM's efforts to develop and procure a family of printed circuit board testers. DESCOM developed a database that would allow USATSG to review both equipment supported and equipment soon to be purchased.

Fiber Optics. Fiber optic TMDE support had been and would continue to be an issue. Funding to purchase the required equipment to support fiber optic TMDE in the field was not available during the FY89. Another issue that was not solved was that of training personnel to repair the equipment. Repair support was so complex that it might not be economical to sanction organic Army support because of the turnover of personnel. Further study of this issue would be required.

Supportability Matrix Database. The TMDE supportability matrix database experienced a significant increase in systems and records of TMDE items tracked. The database increased in FY89 from 400 records to over 2,400 records covering over 100 systems. The TMDE database had accurate and current data which was used to determine which TMDE supported a particular system. The USATSG obtained access to the Army manpower criteria and the table of organization and equipment databases at Fort Leavenworth, Kansas. The use of these databases would assist in manpower planning and equipment distribution.

Calibration Management Information System (CALMIS). USATSG conducted the first annual CALMIS Users Conference on 28 and 29 September 1989. This conference served as a vehicle to enable the users of CALMIS software to present their problems and to be provided information on the new release package and other planned improvements. During FY89, CALMIS release 3.0 and 3.2 were fielded to upgrade and improve the CALMIS software used by elements of the USATSG.

Equipment Review. In an effort to dispose of obsolete or unserviceable depot stock while assuring all useable assets were maintained, the USATSG screened 365 lines of equipment, accessories, and repair parts that were components of, or used with, the 286/287 Transfer and Reference Calibration Sets. This resulted in a savings by disposing of the obsolete/unserviceable items while maintaining items that could still be used to support field requirements.

Equipment Deployment. Seventeen items were deployed with required logistics support to USATSG activities. These fieldings included preparation of fielding plans, repair parts provisioning, training, procedures, and reviewing manuals on maintenance significant instruments. Procurement action was initiated for all items not already in the supply system and coordination was required with the appropriate command for standard items already in the systems to assure sufficient quantities were available for the USATSG elements.

Repair Parts and Special Tools List (RPSTL). In addition to the publication of the supply catalog hand receipts, ten lists had been completed and fielded to support the TMDE and/or calibration standards. These lists were fielded concurrent with the deployment of the TMDE. The RPSTL listed and authorized spares, repair parts, special tools, and special support equipment required for performance of direct and general support maintenance. They also authorized the requisitioning, issue, and disposition of spares, repair parts, special tools and special support equipment as indicated by the source maintenance and recoverability codes.

Asbestos. A study was conducted by USATSG personnel to identify certain types of items which contained asbestos. The study was performed to eliminate the possible effects of this material as a health hazard. Identification of the known parts was provided to USATSG field elements so that they could eliminate the health hazard without relinquishing the support capability.

Inspections. During the month of October 1988 the Command Equipment Supply Management Reviews (CESMR) of the 95th Maintenance Company and the U.S. Army TMDE Support Activity-CONUS were completed. Onsite visits were conducted at Fort Campbell, Fort Lewis, Fort Carson, TMDE Support Center (TSC)-Redstone Arsenal, TMDE Support Operations (TSO)-Vint Hill Farms, TSO-Harry Diamond Laboratories, TSC-Aberdeen Proving Grounds, Fort Drum, and TSO-Seneca Army Depot. The overall rating assigned by the USATSG Commander was satisfactory for both reviews.

A follow-up review was conducted at the TSC-Redstone during 5-6 June 1989 on the findings during the CESMR. The purpose of the review was to verify action had been taken to correct observations made during a 21-29 September 1988 inspection. An overall rating of satisfactory was assigned.

During the period 10 April-12 May 1989 a Command Supply and Equipment Management Review inspection was conducted of the 517th Maintenance Battalion (TMDE). An overall rating of satisfactory was given by the USATSG Commander to all elements with the exception of the 524th Maintenance Company, which was assigned an unsatisfactory rating. A reinspection of the 524th Maintenance Company was planned during the October-November 1989 timeframe. As an added mission for personnel assigned to accomplish the CESMR, all weapons and sensitive items were bar coded with photo imaged metal labels to improve the accuracy and reduce inventory time on these items.

Army Authorization Document System Submissions. The USATSG reviewed and forwarded the Army Authorization Document System submission update for FY90 to Headquarters, Army Materiel Command, for the U.S. Army TMDE Support Activity-CONUS (TDA [Table of Distribution and Allowances] W4L6AA); the 74th Maintenance Battalion (TMDE 29670HX102, 29229HX105; TDA XXWB2G99); the 517th Maintenance Battalion (modified tables of organization and equipment 29670HX101, 29229HX102, 29229HX103; TDA's XXWH8799, XXWH8499, XXWH8T99, XXWH8S99); the 95th Maintenance Company (MTO E29229HX104); and Headquarters USATSG (TDA XXWIPLAA). These updates, needed because of realignments and approved equipment additions, required an input of approximately 3,000 changes.

Cross-Leveling. During FY89 excess equipment totaling \$1,006,016 was cross-leveled throughout USATSG. The utilization and cross-leveling of excess equipment was considered to be a major cost savings; it also provided the required equipment without the delay of awaiting authorization approval and procurement.

Publications. In FY89 the USATSG processed 2,614 manuscript pages consisting of 45 new and revised calibration procedures, 121 changes to calibration procedures, and 11 miscellaneous publications in support of the calibration program. There were 154 new and revised automated calibration programs developed during this period. The USATSG maintained over 1,285 calibration procedures, including 323 automated calibration procedures. The TEMOD program was supported with calibration procedures concurrent with deployment of each item. No items were fielded without calibration procedures.

An extensive update to TB 43-180 was accomplished during FY89. Many changes were made to update national stock numbers, calibration procedure identifications, system codes, and calibration intervals.

A major revision to AR 750-25, *Army Test Measurement, and Diagnostic Equipment Calibration and Repair Support Program*, was prepared to update responsibilities and policies for the calibration and repair of TMDE. A draft copy of the proposed revision was prepared and staffed within USATSG. A coordination draft was developed utilizing inputs from all USATSG elements. This coordination draft was

staffed with AMC major subordinate commands prior to submission to Headquarters, AMC, for staffing with AMC Headquarters, Army Staff, and MACOMs. All staffing was completed for the merging of AR 750-25 and AR 750-43, *Army TMDE Program*, into one regulation under the Army Regulation Reduction Program. It was also approved by HQDA's Deputy Chief of Staff for Logistics and forwarded to The Adjutant General for printing. The revised regulation (AR 750-43) established new TMDE support program goals in owner/user TMDE availability and delinquency rates. TB 750-25, November 1984, *Army Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Repair Support Program*, was under final review and MACOM staffing at HQ, AMC.

The USATSG was addressing the problem of managing, distributing, storing, and updating an ever increasing quantity of publications by researching various paperless publication processes. A 6-month study was conducted to analyze the current system of providing changes and updates versus an automated near paperless system. Based on the requirements identified in the analysis and a review of available technology, a logical, practical, and cost effective implementation plan was developed. The four basic phases were to be proof-of-concept, file room database conversion, central system automation, and electronic distribution. The first phase would be implemented by purchasing enough hardware to test several workstation platforms in order to support validation of the system concepts and to test the user interface.

Software Library. The CONUS software library project was completed. The lists of all validated software were sent to users of common automated calibration systems. The entire list of approved programs was now included in the USATSG calibration procedures master list.

PERSHING II. Support of the PERSHING II Systems Component Test Station (SCTS) continued. The In-System Verification System, previously field tested by USATSG personnel, was fielded during the first quarter of FY89. A new PERSHING II SCTS support package containing a modification kit, special purpose cable, and updated software was fielded concurrently. This package allowed calibration technicians to emulate SCTS loading effects while performing off-line calibration/repair actions on SCTS line.

New Equipment Training. The USATSG activated the Army Modernization Training Automation System (AMTAS) in the new equipment training mission. The first New Equipment Training Plan under the USATSG's own identifier was completed in September 1989. This gave USATSG its own identity within the Army training community.

There were 60 classes, graduating 568 students, conducted by New Equipment and Technology Training Division (NETT) personnel. The class covered new equipment which had been fielded as well as the Tactical Army Combat Service Support Computer System (TACCS), Calibration Management Information System (CALMIS), CALMIS Supply, and the Calibration Standards Refresher Course. The constant turnover of personnel required a minimum of one TACCS/CALMIS course per month and one CALMIS supply course per quarter. Because of the new equipment being added to the calibration sets, an additional week was to be added to the Calibration Standards Refresher Course effective the first quarter of FY90.

After attending the printed circuit repair training, Logistics Directorate instructors developed a course to be taught by the NETT personnel. While developing the course, a program was developed to utilize surplus/excess electronic components and printed circuit cards. This program was expected to produce a savings of \$25,000 per year.

Security Assistance. The Logistics Security Assistance Division had been actively involved in FMS cases, having a total value of \$15.8 million, with 11 countries. There were projected FMS cases with six countries having a value of \$2.2 million in varying stages of approval or acceptance.

The FMS personnel developed and implemented a computerized system which optimized the tracing of equipment sent to USATSG by foreign customers for higher level support. This system provided the

Logistics Directorate with the means to maintain a high degree of precision in tracking the status and location of FMS-owned TMDE. An additional benefit of this program was the ease of providing data and the accuracy of the information contained in both regular and unscheduled reports. Since the inception of this system, not one item of equipment was lost or misrouted.

The USATSG completed the review of the Ellis Watts proposal (FMS Case TC-B-UBH, United Arab Emirates) to produce the mobile calibration facility. Preliminary negotiations resulted in reducing the contractor quote by \$150,000.00.

U.S. Army TMDE Support Activity-CONUS (USATSAC). USATSAC was asked to complement the USATSG Regulation 10-2. This was done to ensure that USATSAC was treated in the same manner as the other field operating commands of USATSG. Work began on the regulation in September 1988, and it was published on 15 January 1989. It clarified the relationship between USATSAC and the USATSG as well as clearing up many misconceptions concerning the responsibility for the performance of various functions.

On 26 February 1989, approval was granted to rename the Area Calibration Repair Centers (ACRC) as Area TMDE Support Centers (ATSC). The change was made to eliminate the incorrect perception that the workload was equally divided between calibration and repair. In fact, calibration was 92 percent of the mission, and repair was only incidental to calibration. This change was incorporated into USATSAC Regulation 10-2.

Throughout USATSAC, an average delinquency rate of 2.6 percent was achieved for FY89. Tremendous effort had been made by each ATSC, TSC and TSO in achieving the 3 percent delinquency rate goal. Further fielding of the TACCS, the CALMIS repair parts and supply system and an intensified training program for the TMDE coordinators contributed to this reduced delinquency rate. USATSAC managed and supported over 470,000 items at 59 sites scattered across the United States and Panama. The support USATSAC provided was complicated not only by some of the remote locations but by the variety of the TMDE items supported.

Of the total annual calibration and repairs performed by USATSAC in FY89, 92 percent were for calibrations and 8 percent were for repairs. A weighted average based on data collected for FY89 indicated that 3.5 man-hours were utilized for an average repair and 1.5 man-hours for an average calibration.

A three-man calibration team from TSC-Corpus Christi traveled to Belgium from 6 to 24 February 1989 to calibrate a UH-1 Helicopter Tail Rotor Boom Fixture. This fixture belonged to the Aviation System Command, Europe, located outside Brussels at Melsbrook Airport. The fixture had been unused and left outside for several years. The AVCRAD had stripped and painted the fixture in their efforts to refurbish it prior to the team's arrival, but the team still had to remove and replace all the leveling plates and adapters because of extensive rust damage. The fixture was also modified to accommodate the "S" model tail boom. The fixture was aligned to specifications and placed on a 2-year calibration cycle.

TSC-Panama and TSO-Honduras operated under extremely adverse conditions during FY89. The hostile political climate in Panama coupled with the Panamanian Government's anti-American sentiment caused considerable hardship on TMDE Support Group personnel stationed in country. Throughout all of this adversity TSC-Panama and TSO-Honduras managed to effectively provide customers with quality calibration and repair support. This was evidenced by a customer availability rate which averaged 98.75 percent for FY89. The delinquency rate for the same time period averaged 0.3 percent. The addition of microwave capability early in FY90 would allow TSC-Panama to provide in-country support of items which were currently evacuated out of country for support. Also, with the deployment of the signal generator workstation, items currently evacuated to TSC-Panama from TSO-Honduras would be supported in-country.

The implementation of the Improved DA Concept for TMDE Support in CONUS from 1980 to 1985 resulted in USATSG personnel being permanently located at 60 different installations. With USATSG headquarters at Redstone Arsenal, the MICOM CPO became the principal servicing CPO for USATSG's CONUS management element, USATSAC. Thus, the MICOM CPO provided primary guidance to USATSAC on all personnel matters, while local CPOs across the country administered routine personnel servicing such as recruitment, classification, training, and various other services. Acting on MICOM CPO guidance, USATSAC began incorporating its wage grade personnel into general schedule personnel.

With nearly 90 percent of that task completed, USATSAC encountered opposition from two servicing CPOs which in 1986 resulted in a request for AMC intervention. This intervention ultimately led to an OPM agreement in October 1988 that all USATSAC calibrators were properly classified as GS and that the most nearly appropriate classification standard was the GS-802 Engineering Technician standard. Upon receiving OPM's decision, HQ AMC directed USATSG in April 1989 to begin converting all USATSAC civilian calibrators to GS-802 Engineering Technicians. The first step by USATSAC was to initiate a change to its TDA (completed in May 1989) to reflect only GS-802 requirements for its technicians.

The task also involved the classification and implementation of 16 engineering technician position descriptions which had been previously developed by USATSAC in Factor Evaluation System (FES) format and were sufficiently generic in terminology to satisfy most CONUS positions. Concurrent with resolving the classification issue was a parallel and related action by USATSG to obtain total position classification and management by the MICOM CPO. The change was made to eliminate the past fragmented and diverse classification decisions which had caused the GS versus WG conflict. Civilian personnel servicing agreements with 59 servicing CPOs were modified to cover this consolidated classification provision and were distributed to the CPOs during August 1989. The effective date for the change was 6 October 1989. Total completion of the GS-802 conversion task was anticipated during early CY90.

74th Maintenance Battalion (TMDE). On 28 October 1988, Building 682 at Camp Carroll was dedicated as the Wasmund Calibration Facility in honor of the late SGM James W. Wasmund. The dedication ceremony was officiated by the Commander, 74th Maintenance Battalion, and was attended by local dignitaries as well as SGM Wasmund's widow and son from Redstone Arsenal, Alabama.

517th Maintenance Battalion (TMDE). TMDE support continued to be provided to Europe (USAREUR). The delinquency rates were stabilized at less than 2 percent rates and continue to be maintained above the 97 percent level. Increased command emphasis was instituted within USAREUR through periodic TMDE readiness update letters. Customer satisfaction continued to be verified during staff visits by senior officials from USATSG and AMC.

Worldwide Commander's Conference. The Worldwide Commander's Conference was held 13-14 June 1989 at Headquarters, USATSG. It raised action items on the funding of 517th Maintenance Battalion's 11 person support of TEMOD equipment fielding at the Fredrichsfeld Staging Area, reimbursement to the 74th Maintenance Battalion for support to the Nation Guard in Hawaii, and environmental controls for transfer level sets.¹⁰

¹⁰See Test, Measurement, and Diagnostic Equipment Worldwide Commander's Conference, 13-14 June 1989, in TMDE FY89 AHR submission. This document also includes the briefing slides used at the conference.

Office of the Executive Director for Conventional Ammunition

Organization and Manpower

The Office of the Executive Director for Conventional Ammunition (EDCA) was reorganized in 1989 from a two division structure, an Acquisition and Logistics Division and a Requirements, Plans and Programs Division, to a three division structure, a Plans and Programs Division, a Logistics Base Division, and a Production Base Division. This was the result of a headquarters AMC reorganization which transferred more of the day-to-day Single Manager for Conventional Ammunition (SMCA) operations from EDCA to the DCS for Ammunition. As a result of this reorganization the authorizations for the Office of the Executive Director were reduced from 8 military and 18 civilian spaces to 6 military and 11 civilian spaces. The military staff consisted of Army, Navy, Air Force, and Marine Corps officers.

The Executive Director was LTG Fred Hissong, Jr., who was dual-hatted in that function in addition to serving as AMC's Deputy Commanding General for Materiel Readiness. The Deputy Executive Director for Conventional Ammunition was COL Kenneth W. Pastore, U.S. Air Force.¹¹

Conventional Ammunition Working Capital Fund (CAWCF)

The CAWCF was a working capital fund used for the procurement of ammunition components and for the assembly of components into conventional ammunition. Funds for the CAWCF came from customer procurement funds, with the customers including the DOD military Services, other non-DOD U.S. customers, and foreign military sales. Management improvements in the CAWCF in FY89 resulted in the highest obligation rate (85 percent) since the inception of the CAWCF. As the target obligation rate for the CAWCF for FY89 had been set at 83.3 percent by the CAWCF Program Budget Decision (PBD) 450, dated 10 November 1988, the CAWCF had met its obligation target. In addition, all the individual Service programs met the target except for the Marine Corps program which only obligated 83 percent due to the cancellation of \$22.6 million from the Rocket 83mm High Explosive Anti-Aircraft M6-0 program and \$7 million in award slippages in the Safety and Assembly for the 155mm Area Denial Artillery Mine and the 155mm Remote Anti-Armor Mine System.¹²

PBD 450 had also directed the SMCA to initiate aggressive action to reduce the unfilled order backlog and to shorten ammunition procurement leadtimes. Following a February 1989 briefing to the Office of the Secretary of Defense Production and Logistics Committee, the Defense Acquisition Board directed that the CAWCF take the following steps:

- * Expedite clean-up of overage orders and report progress to the Committee in six months.
- * Review historical trends of the Backlog.
- * Evaluate the advantages and disadvantages of component breakout versus systems contracting.
- * Evaluate effect of Army's allocation of small business goals.
- * Evaluate and report use of variable quantity multi-year contracts.

¹¹Information on the organization of the office was taken from the EDCA AHR submission for FY89.

¹²Memorandum from the Executive Director for Conventional Ammunition to the Assistant Secretary of the Army for Research, Development and Acquisition, 18 Jan 90, subj: FY89 Annual Report, Single Manager for Conventional Ammunition (SMCA) Activities, pp. 1-2.

- * Review current 30-month average lead-time in order to reduce it to 24 months or less.
- * Identify to OSD regulatory or procedural impediments.
- * Institute with other Services a regular review of unobligated and undelivered programs.
- * Structure successful program contracts with option(s) for viable quantities at favorable fixed prices.
- * Undertake a study to determine the means to reapply funds for programs which can be promptly obligated and expeditiously delivered.

In addition, AMCCOM introduced a number of management initiatives which by giving visibility to late deliveries should improve the SMCA performance. The most important was the Delivery Execution Tracking System (DETS) which tracked programs from contract award to delivery in order to alert management to programs which were late or in danger of becoming late. Previously, since high level management attention was focused on obligation rates rather than deliveries, the primary tracking system had been the Acquisition Tracking System (ATS) which tracked programs through contract award. Now the DETS would pick up where the ATS left off.

Other initiatives included using the Total Quality Management approach, seeking limited contract authority, examining repurchase authority from the CAWCF, and requesting relief from some Federal Acquisition Regulations. These all had to be reviewed at the Army Secretariat level, coordinated with the other Services, and approved by OSD, and in some cases by the Office of Management and Budget and Congress. The attention given to this issue, however, served to reduce the percentage of unfilled orders (calculated by taking unfilled orders as a percentage of the three year total) from 84.4 percent in FY88 to 78.8 percent in FY89, the lowest percentage since FY84.¹³ Furthermore, FY88 and 89 were the first two years in which CAWCF deliveries exceeded new customer orders. This was due to declining orders in addition to the increased emphasis on clearing up delivery backlog, and should result in a further decrease in the unfilled order backlog.¹⁴

The May 1989 OSD CAWCF mid-year review showed that in the past 12 months the CAWCF had lost an additional \$203 million, bringing its total losses to \$372 million. The Services chose to cover this loss by paying it back over a two-year period as a surcharge. This was approved by the OSD Comptroller in a 27 June 1989 memorandum, but that memorandum also expressed concern over the additional loss and tasked the Army to review the pricing policy to determine if a change should be made to the policy of a one-time review of standard priced orders. This review was conducted by the Assistant Deputy Chief of Staff for Ammunition and its preliminary findings were that the one-time review was valid but that other systemic problems needed to be addressed. Those issues were in staffing.¹⁵

The Defense Standard Ammunition Computer System (DSACS)

DSACS was being developed to meet the requirement of DOD Directive 5160.65 that there be centrally maintained DOD-wide automated data system covering the SMCA logistics functions. In the course of development it was expanded to include acquisition and financial aspects. In FY89, however,

¹³Ibid, pp. 2-4.

¹⁴Ibid, p. 5.

¹⁵Ibid., p. 4.

funding constraints led the Joint Logistics Review Committee to redirect efforts to a "bare bones" approach of fielding the four main subsystems, known as the "Big Four."

The first of these was the Customer Acquisition Plan Entry (CAPE), which provided for the entry of and changes to customer requirements, allocations of customer furnished materiel, identification of technical data packages, development of customer required delivery schedules, a way to track the development of individual plans, and a way to summarize requirements. The second subsystem, the Single Manager for Conventional Ammunition Review, allowed the item manager to perform an on-line evaluation of the requirements for a source of supply determination. The Major Item Plan (MIP) provided for component breakouts, identification of peacetime production unique items, and consolidation of common components and end items. The fourth subsystem was Pricing and Budgeting. It provided budgetary documentation to support the planned acquisition and pricing history. Even this "bare bones" DSACS was uncertain as the FY90 funding was only \$2.1 million of a \$4.5 million requirement for continued system development and testing.¹⁶

Ammunition Maintenance

The Integrated Conventional Ammunition Maintenance Plan (ICAMP) was used as the coordinating mechanism for the Service's major ammunition maintenance planning. Of the 123 items initially submitted to the ICAMP, changes were recommended to 43 percent of the items in order to improve efficiency or to achieve a more economical workload. The Services approved 85 percent of the recommended changes. The major maintenance achieved by the ICAMP in FY89, using funding from the Services, consisted of 45.7 thousand tons for the Army, 6.3 thousand tons for the Navy, 3.8 thousand tons for the Air Force, and 8.5 thousand tons for the Marine Corps. There was some growth in major maintenance from FY89 to FY90 due to priority scheduling of the Services Operations and Maintenance Funding across all needs.

The minor maintenance responsibility of the SMCA (care, preservation, and upgrade of Condition E materiel)¹⁷ was unfunded in FY89. As a result, although the minor maintenance backlog of condition E stockpiled materiel had declined from 174 thousand tons in FY82 to 26 thousand tons at the beginning of FY89, it increased by an addition 13 thousand tons in FY89.¹⁸

Ammunition Supply

Since the inception of the Single Manager for Conventional Ammunition, gains had been made in inventory and supply performance. This continued in FY89 despite the impact of base closures and declining personnel and funding levels. A downturn in the percentage of receipts posted and stowed on time were a trend indicator of possible future declines in inventory accuracy.¹⁹

¹⁶Ibid. pp. 6-7.

¹⁷Condition Code E materiel was materiel that required minor maintenance such as derust, repaint, dress-up of markings, etc.

¹⁸Ibid., pp. 7-8.

¹⁹Ibid., p. 8. For a conscious decision by AMC to not fully fund depot inventory operations in order to maintain full support for immediate readiness, with the understanding that it would cause long-term problems, see AMC, *Oral History Program Former Commanders, General Louis C. Wagner, Jr. Commander 14 April 1987 - 26 September 1989* (AMC, 1990), p. 18.

TABLE IV-10
Ammunition Inventory Statistics

INVENTORY STATISTIC	FY87	FY88	FY89	DOD GOAL
Material Denial Rate	1.4	1.4	1.22	= < 1.0
Inventory Variance Rate	3.7	4.0	0.2	= < 5.0
Receipt Post/Stow on Time	97.8	94.5	90.8	= > 90.0
Location Recon. Accuracy	90.9	88.7	99.2	= > 98.0
Location Survey Accuracy	99.1	99.2	98.0	= > 98.0

Source: Memorandum from the Executive Director for Conventional Ammunition to the Assistant Secretary of the Army for Research, Development and Acquisition, 18 Jan 90, subj: FY89 Annual Report, Single Manager for Conventional Ammunition (SMCA) Activities, p. 8.

Demilitarization

Demilitarization of conventional ammunition continued to be a serious and unsolved problem. In 1986 the EDCA had convened a blue ribbon panel which had proposed a seven-year demilitarization workload plan to reduce the demilitarization backlog from 158K short tons to 40K short tons by FY93. This was not funded and the backlog had grown to in excess of 193,000 short tons. This backlog was a safety problem, as evidenced by the facts that 59,323 pounds of propellant awaiting demilitarization had been destroyed in the 9 August 1989 Hawthorne Army Ammunition Plant fire and that demilitarization stocks had also been implicated in the June 1985 igloo detonation at the Lexington Bluegrass Army Depot. It also occupied critical storage space and took about seven million dollars a year in Operations and Maintenance, Army, funding to maintain. It failed, however, to successfully compete for funding. In addition, the cheapest method of destruction, open burning and denotation, was increasingly limited by environmental constraints.²⁰

Complex Munitions Report and Other Studies/Reports

In 1986 the Air Force had proposed that munitions obtained from prime contractors as end items (complex munitions) not transition to SMCA control. This was based upon dissatisfaction with the history of the transition of two cluster type munitions from Air Force to SMCA control, GATOR and Combined Effects Munitions (CEM). The SMCA reviewed the procurement history of these two items on behalf of the Joint Ordnance Commanders Group (JOCG) and determined that subsequent munitions of these types should transition to SMCA control. Its report also contained a number of acquisition and transition related recommendations for JOCG consideration.

The Office of the Executive Director for Conventional Ammunition considered such studies and reviews to be an effective way to determine shortcomings in ammunition programs and to make recommendations to correct it. Two studies were planned for FY90, one on the adequacy of transition plans by the Services and SMCA in providing ammunition items of proven technological maturity and producibility

²⁰Memorandum from the Executive Director for Conventional Ammunition to the Assistant Secretary of the Army for Research, Development and Acquisition, 18 Jan 90, SUBJECT: FY 89 Annual Report, Single Manager for Conventional Ammunition (SMCA) Activities, pp. 9-10.

for procurement by the SMCA. The other study would be a review of the management of the stockpile, covering both SMCA and non-SMCA assigned items.²¹

Ammunition Production Base (PB) and the ICAPP

The SMCA annually produced the Integrated Conventional Ammunition Procurement Plan (ICAPP) to serve as an integrated and analyzed compilation of the Services' conventional ammunition procurement programs. It was accompanied by assessments of investments in the munitions industrial base and of plant workloading issues.

The ICAPP, reviewing the period from FY88-94, showed that munitions funding would retreat from the 1985 high of \$3.8 billion to the \$2.5 billion of the early 1980s. Starting in FY90 some end items would be produced in quantities too low to support more than one producer of the components and some of the production base load, assembly and pack operations. Examples included the M55 detonators, M864 projectile metal parts, and Mine Clearing Linear Charges, all of which were required in quantities too low to be split between multiple producers. This would result in plant workloading negative impacts that would have provoked Congressional interest and scrutiny. In addition, such decreased requirements tended to severely limit plant workload planning and procurement strategy options.

This problem was caused by a variety of factors in addition to funding constraints. Reduced requirements were also caused by a changing threat and by a reliance on more effective high price low volume ammunition. The trend in procurement for those munitions was to obtain them through prime contractors willing to self invest in facilities and to be responsible for providing a finished total system. Production facilities so provided were not retained after last buy, and therefore added nothing to wartime mobilization capacity. The collective result of these stresses on the system was a reduced number of potential vendors and therefore an increase in unit cost due to the combined overall lack of volume requirements and the resulting loss of any competition incentive. In addition, as facilities were no longer needed for active peacetime production, layaway and maintenance costs for the production base facilities retained for wartime readiness would increase. The SMCA was planning a study of the ammunition production base for FY90.²²

United States Army Materiel Command-Europe (AMC-Europe, AMC-E)

Most Significant Issues

The most significant issues handled by AMC-Europe Directorate for Readiness/Logistics Assistance Office-Europe included the LAR (logistics assistance representative) Training Conference and participation in several USAREUR readiness exercises, which resulted in increased mission effectiveness for both AMC-Europe and USAREUR.

The most significant issue handled by AMC-Europe's Directorate for Materiel Fielding was the increase in the number of weapon systems monitored.

²¹Ibid., p. 10.

²²Ibid., pp. 11-13.

The most significant issues handled by AMC-Europe's Directorate for Supply, Maintenance and Transportation were the chairing of the annual Modification Work Order (MWO) Coordination/Scheduling Workshop; assisting the USAREUR (DCSLOG) in the development of policies and procedures needed to institutionalize Chemical Agent Resistant Coating (CARC) paint; the Office of the Secretary of Defense Humanitarian Assistance Program; the Senior Leaders Maintenance Conference; the European Logistics Conference; War Planning and Mobilization; the decision not to participate in the Battle Damage Assessment and Repair (BDAR) exercises; European Redistribution Facility (ERF) Order Ship Time (OST); Reverse Support List Allowance Card (SLAC) Review; impact of OST on Generation of Class IX Excess; D6S Receipt Processing Review; ERF Credit Return to Theater; Procurement Policy Advisor; Mainz Army Depot Contractor Purchasing System Review; Contracting Officer's Representatives (COR) Training; Mainz Army Depot Workloading; and Depot Level Repairables Test in USAREUR.

The most significant issues handled by AMC-Europe's Directorate for Resource Management were the realignment of AMC-Europe, Vander Schaaf manpower reductions, and revision of an agreement with USAREUR on the Recyclable Materials Program.²³

The most significant issues handled by AMC-Europe's Security, Plans, and Operations Office were HQ AMC-Europe's participation in the WINTEX/CIMEX exercise, realignment of the Mobilization Table of Distribution and Allowances (MOBTDA), update of AMC-Europe Transition to War Plan, centralized training management, and expansion of the European Aviation Classification and Repair Activity Depot (AVCRAD) in Brussels, Belgium.

The most significant issues handled by AMC-Europe's Quality Assurance Office were the development of a database that allowed timely submission of Quality Deficiency Reports/Equipment Improvement Recommendations (QDR/EIR) and of a reporting system which integrated deficiency reporting with the supply system.

The most significant issues handled by AMC-Europe's Office of the Inspector General were the implementation of a Command Inspection Program and the loss of the civilian assistant position under the Vander Schaaf manpower reduction, discussed below.

The most significant issues handled by the AMC-Europe's Public Affairs Office were the press conference on Intermediate-range Nuclear Forces (INF) Treaty, the press conference on hazardous materials, the *Army Times* article on AMC-Europe operations, and news coverage of overseas deployment training at AVCRAD.

Organization, Manpower and Personnel

Manpower and Personnel Changes. At the beginning of FY89, the manpower authorization for HQ AMC-Europe was 86 civilian and 28 military, for a total work force of 114 personnel. At the end of the fiscal year there were authorized 86 civilians and 25 military, for a total of 111. The Command Group of AMC-Europe had several key personnel changes during FY89. Brigadier General Joseph S. Laposata transferred command of AMC-Europe to his Chief of Staff, COL Carl N. Price, on 23 August 89, at ceremonies held at the Heidelberg Officer's and Civilian's Club. COL Price was the acting commander of AMC-Europe for the remainder of FY89. BG Laposata was frocked to Major General during the ceremony, prior to assuming his new duties as the Deputy Chief of Staff for Logistics, United States Army Europe and Seventh Army.

²³The realignment and the Vander Schaaf reductions are discussed below under Organization, Manpower and Personnel rather than in the Resource Management section.

The change-of-command ceremony itself was markedly different from the norm for such an event. It began with a music video presentation that recounted the scope of AMC operations in Europe, and continued with a narrated video that portrayed the diverse missions performed by AMC's major subordinate commands in the theater. COL Arthur Swisher had departed as Chief of Staff in December 1988, and COL Carl Price reported in as the new Chief of Staff in January 1989.²⁴

Reorganization of AMC-Europe. On 19 December 1988, a concept plan for a proposed reorganization of AMC-Europe was submitted to HQ AMC for approval. The primary purpose of the proposed reorganization was to eliminate overlap of some functions, eliminate grouping of dissimilar functions, and to effect organizational efficiencies. The organizational changes proposed were to:

- (1) Redesignate the Deputy Chiefs of Staff as Directors.
- (2) Move the Procurement Management Office from Resource Management to the Directorate for Supply Maintenance and Transportation.
- (3) Disestablish the Deputy Chief of Staff for Operations and:
 - (a) Establish the Security, Plans and Operations Division as a separate office.
 - (b) Realign the Engineering Support Division as an Office of the Directorate for Materiel Fielding.
 - (c) Redesignate the Services Support Division as the Headquarters Detachment (HQ Det).
- (4) Move the physical security functions from the Services Support Division (HQ Det) to the Security, Plans and Operations Office.
- (5) Combine the in-theater visitor control program with the protocol functions for distinguished visitors.

The authority to provisionally implement the proposed realignment, requested by AMC-Europe on 31 January 1989, was provisionally approved by HQ AMC and implemented 1 February 1989, pending processing of the concept plan.

Vander Schaaf Reductions. In February 1988, a review of the Unified & Specified Command Headquarters was conducted by Derek J. Vander Schaaf. The final study recommended a 550 space cut at the USAREUR MACOM level, and the elimination of policy and management oversight responsibilities for Base Operations. In October 1988, the Secretary of Defense announced his decision to implement manpower reductions as a result of the study recommendations. In December 1988, AMC was notified by USAREUR that the European "stovepipe" organizations would "share" these reductions, which in the case of AMC-Europe, was determined to be 20 out of the 60 space reduction for the "stovepipe" organizations.

In January 1989, AMC-Europe identified to HQ AMC a total of five spaces (four military and one civilian) which could be eliminated without impacting the mission. This position was concurred with by the AMC HQ staff and furnished to USAREUR. Later that same month, HQ AMC was notified by DA to "resolve the issue with USAREUR". AMC-Europe was directed to "lay down" its organization to the Chief of Staff USAREUR, and this was done on 10 February 1989. At that briefing, the AMC-Europe

²⁴Unless otherwise noted, information in this chapter is taken from the AMC-Europe historical submission for FY89.

organization received strong support for our position from both the 200th TAMMC representative and the USAREUR Deputy Chief of Staff for Logistics (DCSLOG). The USAREUR Chief of Staff informed BG Laposata that the space issue was now beyond the scope of the Vander Schaaf Study, and that a 20-space reduction had to be made, but that it was not limited to AMC-Europe and would be spread across all AMC activities in Europe.

Due to the short time frame imposed, AMC-Europe was instructed on 13 February 1989 by BG Arndt, AMC DCSRM, to identify the additional 15 spaces from AMC-Europe authorizations. Gen Wagner, CG AMC, provided BG Laposata with the authority to review all AMC positions in Europe to determine where the decrements could be taken with the least impact on AMC support to the theater, and provided assurance that the 15 spaces would be returned to AMC-Europe in due turn.

On 22 February 1989, AMC issued a message to the MSCs informing them of the Vander Schaaf actions and the review of OCONUS positions to be conducted by AMC-Europe. AMC-Europe issued a data call to the MSCs on 27 February 1989, tasking them to identify their military and civilian authorizations in Europe, and to stratify those positions based on risk to mission accomplishment. Based on data received, the Directorate for Resource Management presented their recommendations for AMC space cuts to BG Laposata on 10 April 1989. At this time BG Laposata decided to take two additional positions from AMC-Europe with the remaining 13 spaces spread among the rest of AMC's European positions as follows: LAO-E (Logistics Assistance Office-Europe) (1); AMCCOM (1); MICOM (2); TROSCOM (1); TACOM (2); DESCOM (3); AVSCOM (1); and CECOM (2). This data was forwarded to the HQ AMC's DCS for Management and Productivity by memorandum on 3 May 1989 for implementation through the Program and Budget Guidance process.

Soldier and NCO of the Year. Two AMC-Europe soldiers were selected AMC NCO and Soldier of the Year for FY89. SGT Jesse Walker, 523rd Maintenance Battalion, and SPC Catherine McCoy, 523rd Maintenance Company, were selected as NCO and Soldier of the Year, respectively.

Directorate for Readiness/Logistics Assistance Office-Europe

Supply Logistics Assistance Representative Training Conference. LAO-Europe conducted a Supply Logistics Assistance Representative (LAR) Training Conference in Wiesbaden, Germany, from 17 to 21 April 1989. The workshop emphasized retail supply operations in Europe and was geared toward establishing a baseline of knowledge about the logistics system. All supply LARs in Europe attended this training conference.

MG Salomon's Involvement in the Logistics Assistance Program (LAP). MG Leon E. Salomon, HQ AMC DCS for Readiness, who was also dual-hatted as the Commander of the Logistics Assistance Program Activity (LAPA) which ran AMC's worldwide Logistics Assistance Program, was the keynote speaker at the LAP Workshop held in Garmisch, Germany, in November 1988. MG Salomon also visited most of the major combat Units in Europe and promoted the mission and functions of the Logistics Assistance Program. His visits to supported units were to determine how well the Logistics Assistance Program supported the soldiers in the field.

LAO-Europe's Participation in USAREUR Exercises. LAO-Europe was involved in exercises DISPLAY DETERMINATION, CARAVAN GUARD and WINTEX/CIMEX. LAO-Europe's representatives supported units in Turkey, Greece, and Italy during these exercises. Several members of LAO-Europe participated in WINTEX/CIMEX to test the Transition to War Plans. LTC James Abell, Chief, Logistics Assistance Office Southern European Task Force (LAO SETAF) was instrumental in providing support to USAREUR during DISPLAY DETERMINATION.

Logistics Assistance Program in Europe. COL Pybus, Director, Readiness/LAO-Europe and Mr. Hardie Lequire, Deputy Director, Readiness/LAO-Europe, addressed six of the MSC Workshops held during FY89. They briefed the MSC Logistics Assistance Representatives on the goals and objectives of LAO-Europe and discussed initiatives to improve the Logistics Assistance Program in Europe.

Activation of Two New LAOs in Europe. Two new LAOs were activated in Germany during FY89. LAO Berlin, headed by Mr. Charles Cronen became operational in November 1988. LAO 1st Infantry Division (Forward) was activated in December 1988, in Goeppingen, Germany, with CPT Christopher Williams as Chief.

Readiness and Sustainability (R&S) Committee Meeting. This committee continued to be a valuable management tool for AMC-Europe to monitor USAREUR-wide materiel readiness trends. The committee was comprised of area and regional LAO Chiefs from the 23 LAO Offices, representatives from the AMC-Europe, local AMC Major Subordinate Commands and 200th Theatre Army Materiel Management Center (TAMMC) staffs, and was chaired by the Commander, AMC-Europe. The committee reviewed a standing list of major combat systems on their abilities to perform their missions, but the committee also maintained the flexibility to add new systems of command interest. In FY89 Intelligence and Electronic Warfare systems were added to the list as were other systems newly fielded by AMC. Additionally, key supply statistics were added to the agenda this year in order to monitor the effectiveness of the interface between the wholesale and retail supply systems. The R&S ensured that the concerns of customers, as reported by each LAO through the committee process, were acted upon expeditiously and that logistics information from the AMC community, in turn, quickly reached the customer.

Directorate for Materiel Fielding

Weapon Systems Fieldings. The Directorate had monitored 171 systems as of the end of FY89. The number of systems, by fielding command, at the end of the fiscal year were: AMCCOM 28, AVSCOM 18, CECOM 60, MICOM 17, TACOM 34, TROSCOM 14. During FY89, 69 system fieldings took place. At the end of the fiscal year 52 fieldings were ongoing and 17 were completed. There were 37 new start fieldings in FY89. The total number of end items handed off by AMC fielding activities during the period was 24,953. The most active month for fieldings was May, when 4,734 end items were handed off. Systems status was reported monthly at the Force Modernization Guidance Committee. An average of eight systems per month had major problems affecting fielding and 22 systems per month had minor problems. The month in which the most problem systems (34) were reported was July. The most common major problem areas were funding, hardware, authorizations and logistics support. The most common minor problem areas were materiel fielding documentation, logistics support, facilities and hardware.

Force Modernization Database. The AMC-Europe automated database had been operational since February 1989. The database was a collection of open issues that might impact fielding of new equipment to the European theater. It was menu driven, requiring no training for users. Over 170 new equipment systems were being tracked with the database. It was updated on a real-time basis by AMC-Europe action officers, but was available for review by any staff member on the Hammonds Barracks LAN. Hundreds of on-line inquiries had been made, and over 115 exportable diskettes were distributed to USAREUR units. An advanced version was being programmed. Programing assistance was provided by SIMA. An advanced version of the database was scheduled to be operational by December 1989. It would include direct dial-in access for remote users such as the in-country field LARs and CONUS users who had the capability to use the Telecommunication Network (TELNET).

Materiel Releases. During FY89, 37 new systems were fielded to USAREUR, with 30 of them requiring materiel release. Of that 30, 21 were fielded with a full release, 8 with conditional releases (two of which had achieved full release by early FY90) and one was fielded with a hand receipt. In addition, 5 follow-on fieldings required conditional releases. The most common cause for conditional releases during

FY89 was inadequate spares/repair parts. Of the 42 conditional releases carried over from FY88, 20 were scheduled to get well during FY89. Seven systems actually got well and one system was replaced.

Though progress was made in the number of full versus conditional releases, the timing of materiel release approval continued to be a concern in FY89. On several occasions approval was not obtained until the week of handoff, and in one instance handoff had to be delayed, causing much consternation to the materiel fielding team and USAREUR. Delay in approval was generally caused by the lateness of the request for a user's acceptance statement. Only the CINCUSAREUR could approve conditional releases, and Project Managers needed to allow adequate time for the levels of staffing required for his approval.

M1/M60 Retrograde Program. In February 1989, HQDA announced the decision of the Vice Chief of Staff of the Army that halted special depot upgrade programs for retrograde and that made Technical Manual (TM), *10/20 Preventive Maintenance Check Services (PMCS)*, the single Army maintenance standard. As a result, a unit to unit transfer policy was developed and implemented. The losing MACOM coordinated and conducted the transfer with the gaining MACOM. AMC provided technical oversight including arbitration and interpretation of the standards. The first transfers occurred and were successful. Sixty M1IPs were transferred from 1st Infantry Division (Fwd) to the National Training Center and 53 Bradleys from Theater Reserve to the National Guard. Personnel from the Heavy Force Modernization Materiel Fielding Team were on the ground throughout the acceptance inspections as AMC's representative, but had not received any requests for arbitration.

Reverse Support List Allowance Computation (RSLAC). RSLAC was a program developed by MRSA to identify spare and repair parts which supported equipment being withdrawn from an organization. As developed, it depended on the losing unit to initiate the request for an RSLAC and it was labor intensive from the unit's point of view. Within USAREUR, which has had problems with excess in authorized stockage lists (ASLs) and Prescribed Load Lists (PLLs), the RSLAC was seldom used. During FY89 AMC-Europe conducted a General Officer Steering Committee (GOSC) sponsored study on the Reverse Support List Allowance Card process in USAREUR. Results indicated that the Reverse SLAC product was a useful tool in identifying ASL/PLL lines no longer required for stockage due to system displacement under force modernization, but usage was limited by a lack of awareness at the unit level.

AMC-Europe, with the cooperation and assistance of the Materiel Readiness Support Activity (MRSA), established a system whereby RSLAC would become an integral part of the Total Package Fielding process. Where applicable, AMC-Europe would provide to MRSA the information it required using total package fielding documentation only, with no need to go to any USAREUR unit for data. The MRSA product enabled AMC-Europe to give to the unit having equipment replaced a list of unneeded parts which can be scrubbed from the ASL/PLL and theater stocks. This would help USAREUR in reducing excess.

European Redistribution Facility (ERF). Progress continued throughout 1989 toward the construction of the three Automatic Return Item (ARI) Wash Facilities for the ERF. Ground breaking for the Nahbollenbach, Germany, ARI took place on 7 August 1989, with construction completion expected by March 1990. The start of construction for the Boeblingen, Germany, ARI was 19 April 89 and completion was scheduled for 15 December 1989. Although progress was slower for the Hanau, Germany, ARI Wash Facility, the start of construction was expected to take place in January 1990. A modification of an ongoing contract, to repair the railroad track at ERF, Nahbollenbach, was awarded due to a design deficiency. The architect failed to identify the size of the foundation of eight light poles that were in the path of a drainage line to be constructed under the contract.

Central Clearing House. A concept to improve the Total Package Fielding (TPF) process within Europe by establishing an in-country agent responsible for all materiel fielding requirements was agreed to by HQ, DESCOM and AMC-Europe. Prior to that, there had been no AMC activity in Europe tasked to coordinate all materiel fielding activity. Materiel was often shipped directly to the staging site without prior

notification, and sometimes materiel was "called forward" without DESCOM or AMC-Europe knowledge.

The Central Clearing House concept will establish AMC-Europe as the in-country TPF executive agent. As such, it would review, validate and coordinate all materiel fieldings in USAREUR, including any AMC real estate or facility acquisitions within USAREUR needed to support unique or one-time fielding requirements. It would also serve as the continuous point of interface between the USAREUR staff and elements involved in materiel fielding (e.g., materiel fielding teams, Mainz Army Depot, contractors, etc.). A memorandum of agreement was drafted establishing the relationship between DESCOM and AMC-Europe in this regard.

Central Staging Workload Conference. AMC-Europe, in coordination with Mainz Army Depot (MZAD), sponsored a European Central Staging Workload Conference in December 1988. The purpose of the conference was to ensure that all TPF systems to be fielded to USAREUR during the upcoming fiscal year were identified and workloaded and that the requirements for central staging were provided to DESCOM and MZAD.

Directorate for Supply, Maintenance and Transportation

Annual Modification Work Order (MWO) Coordinating/Scheduling Workshop. During FY89, AMC-Europe was deeply involved in the MWO program in Europe. Its role was one of mediating problem areas between the AMC community and USAREUR and providing assistance wherever needed to keep the AMC MWO program operating as smoothly as possible within USAREUR. In June, AMC-Europe chaired the annual MWO Coordinating/Scheduling Workshop held at 200th TAMMC, in Zweibruecken, Germany. This meeting was the only one held in Europe where AMC MSC MWO program managers, 200th TAMMC, and USAREUR units discussed all MWOs for both the current and the next fiscal year.

Problem areas were discussed and issues identified which require further action. Modification Work Order Fielding Plans (MWOFPs) were negotiated, where possible, to establish application requirements/schedules for each MWO. The FY89 workshop also included review of the AMC/USAREUR memorandum of understanding (MOU) covering the MWO program in Europe. The MOU was being revised by AMC-Europe and 200th TAMMC in order to document procedures to be followed by all parties in conducting MWO negotiation/application in USAREUR.

AMC-Europe held an additional meeting in August 1989 to again address specific problems within the MWO program, primarily related to the European theater. This meeting further identified issues and assigned actions where appropriate. AMC-Europe would continue to track these issues and to document and coordinate actions that were accomplished. AMC-Europe participated in other meetings held in Europe which were related to specific MWO planning. Examples of these were meetings held at 200th TAMMC to discuss the M1 Abrams MWO program, and to discuss the M2/M3 BFVS MWO program.

Chemical Agent Resistant Coating (CARC). During FY89, AMC-Europe assisted USAREUR DCSLOG in developing USAREUR policies and procedures to institutionalizing CARC paint within USAREUR maintenance operations. In the past year, USAREUR made considerable progress toward implementation of CARC usage by inspecting all spray paint facilities for compliance with regulatory guidance, issuing directions which spray paint facilities must follow to be certified, and by directing use of CARC for touch-up painting using rollers or brushes. AMC-Europe supported this effort by providing technical information, and by coordinating actions with HQ AMC, AMC MSCs, MZAD and USAREUR DCSLOG to assist with problem areas.

OSD Humanitarian Assistance Program. The Humanitarian Assistance Program was an OSD Program for the repair and transportation of excess equipment to needy foreign countries for humanitarian purposes. USAREUR was tasked on September 1988 to repair 12 pieces of excess construction equipment, road

graders, scoop loaders, tractor and scrapers, to mission capable standard only, for shipment to Afghanistan. The program was a high priority one with very high level visibility. In January 1989 CINCUSAREUR transferred this mission to AMC-Europe with execution to be done at Mainz Army Depot. Statements of work and work estimates prepared by Mainz Army Depot were approved by OSD/International Security Affairs (ISA). Work was completed by MZAD and the equipment was shipped on 10 May 89.

During the time that the Afghanistan project was ongoing at MZAD, two additional projects were proposed to MZAD. One for North Yemen for three scoop loaders, three road graders and 40 M880 vehicles. The second project was for Sierra Leone for two road graders and three scoop loaders. MZAD prepared statements of work and cost and time estimates which were provided to OSD/ISA and approved. These programs were accomplished and completed with complements from OSD/ISA to all concerned in Europe for the excellent response.

Senior Leaders Maintenance Conference (SLMC). The SLMC was sponsored by the Commander-in-Chief, U.S. Army Europe, and was designed to address Army maintenance doctrine and its impact on USAREUR maintenance operations as well to retain a focus on maintenance in a period of decreasing resources. It served as a blueprint for formulating future USAREUR maintenance operations. Senior maintenance leaders from USAREUR and CONUS were invited to the conference, which consisted of a series of discussions on maintenance topics relevant to both CONUS and USAREUR maintenance operations.

The first such conference was held in April 1989 and was deemed essential to USAREUR's maintenance operation, readiness, and sustainability. AMC involvement at this SLMC dealt with two areas involved in AMC's maintenance support to USAREUR, maintenance support activities and depot maintenance, including the depot workload shortage at MZAD. The second SLMC was scheduled to be held in sometime in March or April 1990.

Standard Operating Procedure (SOP) on European Workloading. Prior to 1987, workloading European depot level maintenance facilities was not a well defined program and had not produced a fully integrated process. Its deficiencies included the fact that assets did not materialize for authorized programs, there was no single workloading document, there were extensive program changes, and large amounts of maintenance dollars were being returned to AMC during the fourth quarter when they often could not be reallocated.

During the 1987 European Workloading Conference, an AMC-Europe initiative had been proposed to develop a European Workloading SOP to try to pull all the scattered efforts together in order to improve the workloading process for European maintenance facilities; improve the lines of communication between USAREUR, AMC, AMC-Europe, DESCOM, MZAD, and TAMMC; better control maintenance programs in order to prevent the return of excess dollars too late in the fiscal year; determine the best mix of General Support and Depot Level work to support USAREUR; have all activities use one scheduling/workloading document; prevent excessive workload fluctuations at European maintenance facilities; and examine future programs for planning purposes.

Unfortunately, due to dollar restraints and other priorities, a workloading conference was not held in 1988. During the time between the May 1987 conference and the conference planned for March 1989, the original SOP underwent numerous changes during its staffing process. HQ AMC published this SOP for Management and Control of Wholesale Maintenance in Europe on 15 November 1988. A decision was made during the 1989 Workloading Conference to change the SOP into an annex to the existing USAREUR/AMC memorandum of understanding rather than keep it as an SOP. The SOP was reformatted into an annex, which of necessity deleted much of the detailed data. At the end of the fiscal year the annex was being staffed at HQ AMC.

European Logistics Conference. The first European Logistics Conference (ELC) was held in 1980. Subsequent ELCs were scheduled to be conducted semiannually and to be sponsored by the Deputy Chief of Staff for Logistics. Only general officers were invited to the first conferences, and the topics discussed each year were of high importance to the European Command. However, as the issues grew so did the attendance at the conference. The 17th ELC was held from 25 to 27 October 1988 at the Armed Forces Recreation Center, at Chiemsee, Germany. Seventeen topics were discussed including the Objective Supply System; Unserviceable but Repairable and Salvageable (F & H) Repairables; and REFORGER Lessons Learned. The ELC scheduled for Spring 1989 was cancelled due to lack of funds. The 18th ELC, for general officers only, was scheduled for 16 November 1989 at Heidelberg, Germany.

War Planning and Mobilization. The Directorate was active in planning the war time mission for the organization. Part of the planning process included the review of the Mobilization Table of Distribution and Allowances (MTDA). This review included an update of positions and locations for each individual assigned to the SMT Directorate.

The Maintenance Division completed the war time mission statement for MZAD. This was the first time that MZAD had their mission in hard copy and MZAD was working to incorporate its mission into an operation plan for the depot. The mission statement was also sent to the USAREUR Deputy Chief of Staff for Logistics for his approval and incorporation into USAREUR plans. The mission would be included in the next update of AMC-Europe Transition to War Plan.

Battle Damage Assessment and Repair (BDAR). The role of AMC-Europe in BDAR had been one of assisting in the planning and coordinating of the annual joint firing trials held with West Germany and England, at Meppen, Germany. It was decided by DA that the U.S. would not be an active participant in the 1989 trials. Thus the U.S. representatives were observers only. Once the decision was made not to actively participate, AMC-Europe was not involved in any aspect of the 1989 trials.

Mainz Army Depot Workloading. During the late 1980's depot maintenance began to wane throughout the Army due to severe budget constraints, new equipment fielding of equipment that did not require maintenance as often, and reduced Operation Tempo (OPTEMPO). In Europe the decline was also due, in part, to restrictions placed on training exercises by the German government.

The 1989 European Workloading Conference held at 200th TAMMC and attended by HQ AMC, AMC-Europe, TACOM, AMCCOM, MICOM, CECOM, DESCOM, MZAD, and TAMMC, reduced the MZAD FY 90-95 workload significantly. In FY90 MZAD was only workloaded at 2.6M man-hours against a 3.2M man-hour capacity. No other workload was available due to the declining requirements, with the exception of the tremendous backlog of the Theater Intermediate General Support Repair Program, a P2 funded program which had an unfinanced requirement for FY90 of \$104.2M.

This man-hour shortage was discussed at length at several high level conferences, both in Europe and CONUS, resulting in a DA/AMC initiative to authorize the use of P7M funds to work the theaters backlog of general support, P2 funded, workload, at MZAD. A total of \$29.1M was made available for this program on a one-time basis. Meetings between the theater and AMC-Europe provided a prioritized listing of the top theater backlogged equipments. This listing was subsequently furnished to TACOM/AMCCOM for supportability requirements and Procurement Request Order Numbers (PRONs) were assigned to each item.

Other efforts by MZAD were taken to reduce the workforce without going into a reduction in force (RIF) in order to adjust to the new workload and this had been successful. This maximum attrition rate would continue throughout the out-years to sustain the projected out-years workload.

Depot Level Reparables Test in USAREUR. USAREUR had a compelling need for timely depot level reparable support of its major combat weapons systems to enhance readiness in peace and maintain system sustainability in war. This, coupled with the requirement for Army-wide vertical asset visibility of these high dollar value reparables, dictated a review of current procedures. In addition, Congressional and DOD concerns about Army reparables management increased the need for change. The specific issue involved the modification of the requisition processing procedures for depot level reparables in USAREUR and a change in the ownership and management of depot level reparables at MZAD.

The DA Assistant DCSLOG, HQ AMC DCGMR, and the Deputy Commander in Chief USAREUR agreed to test a system that would permit the Army to improve the posture of serviceable reparables in USAREUR without degrading the Command's prerogative to allocate resources. The test would modify existing USAREUR procedures for processing requisitions for depot level reparables in order to gain visibility of asset posture. It would also transfer ownership/management of depot level reparables at MZAD to AMC in order to allow the wholesale level to provide more serviceable assets to Europe.

A number of initial guidelines were established for the test program. They included:

- * All depot level reparable requisitions would pass through or be visible to the 200th TAMMC and war reserve stocks would not be degraded.
- * TAMMC would continue to be the manager of theater owned depot level reparables.
- * Unserviceable depot level reparables turned into MZAD would be picked up on AMC NICP accountable records and when repaired or rebuilt these items would be used to fill USAREUR requisitions.
- * AMC owned depot level reparables assets, serviceable or unserviceable, would not be removed from the theater.
- * Twenty-six NSNs (National Stock Numbers) would be intensively managed and monitored to measure the impact of the modified system.
- * The test would begin on 1 February 1989 and terminate on 1 February 1990. Monthly in-process reviews would be presented by AMC-Europe and TAMMC to the Commanders of AMC-Europe and TAMMC.

The test involved three AMC MSCs (AMCCOM, MICOM, and TACOM) acting as the source of supply and controlling the in-theater assets through standard depot system at MZAD. The test began on 1 February 1989 with the 200th TAMMC passing back orders for the 269 NSNs that made up the test to the wholesale managers. Starting 1 February 1989, MZAD began transferring all on-hand assets to the AMC accounts for these 269 NSNs and MZAD completed this transfer by 3 March 1989. The 200th TAMMC identified all additional assets at locations other than MZAD, and these were also transferred to the wholesale account. Requisitions and Materiel Release Orders were processed through the wholesale manager for the test NSNs, and the system was working well for the majority of the items. Percent of fill of operating stocks and readiness rate increased through the first three quarters of the test. Quarterly IPRs would be held with representatives from HQDA, HQ USAREUR, and HQ AMC to assess the status of the test results. A final joint test report would be issued by the Commanders of AMC-Europe and TAMMC, with a recommendation as to whether the revised procedure should be continued. That report was due mid-Feb 1990.

Streamlining the Theater Replaced Equipment Process. A concept was developed to streamline the processing of replaced equipment generated by Force Modernization Fielding. Under the previous system

units had sent all their replaced equipment to Kaiserslautern where the equipment was technically inspected and a determination was made whether to place it in Theater Reserve (TR) or to dispose of it. The new concept called for the technical inspection to be accomplished at the unit level where organizational and direct support maintenance could correct minor discrepancies. Thus the equipment would only make one move from the unit to TR or disposal. This saved transportation dollars and made the organization that was resourced for the maintenance of the equipment responsible for it. After testing this became the standard USAREUR procedure for handling replaced equipment.

ERF Order Ship Time (OST) Analysis. The ERF OST objective of 21 days was established in the fall of 1985. While high priority requisitions were experiencing OSTs in the 12-15 day range, low priority requisitions had not achieved the 21 day objective. In 1989, a three month ERF OST Transportation Study was conducted by AMC-Europe. The study's objectives were to analyze the ERF process, to identify measurable shortfalls, to look at ERF-Theater transportation interfaces, and to determine why ERF OST for low priority requisitions had not reached the objective.

Improvements continued to be made. Low priority OST stood at 34.3 days, down from the high in 1988. The study resulted in 16 recommendations for OST improvement, all but one of which was accepted by the USAREUR DCSLOG. An ERF OST Task Force was assembled to implement the approved recommendations. Major Task Force initiatives would be to develop and publish a USAREUR Surface Movements Plan, improve support to low volume/remote units in the Northern Army Group and Benelux countries, increase shipment frequency from ERF to USAREUR units, improve cargo consolidation at the ERF, and update USAREUR's Surface Distribution Plan. On 1 November 1989, the 1st Transportation Movement Control Agency (TMCA) increased the number of Standard Transportation Movement Requests (STMR) outbound from the ERF from 12 to 20 vehicles per week.

Impact of OST on Generation of Class IX Excess. In support of the USAREUR DCSLOG General Officer Steering Committee on Class IX Excess, AMC-Europe conducted an evaluation of the impact that OST and the D6S Receipt Process²⁵ had on the generation of Class IX Excess in USAREUR. The evaluation examined the relationship between receipt-posting performance and the generation of Class IX excess, the impact that OST had on increased pipeline costs, wholesale fill rates, training densities, and the pseudo-receipt process. The results demonstrated that non-posting of receipts, for materiel actually received, could result in excess when inventories were conducted and correct on-hand levels were posted to the automated systems. The evaluation highlighted the importance of the receipt process in maintaining accountability of Army assets and reducing unnecessary fund expenditures.

D6S Receipt Processing Review. AMC-Europe conducted an examination of the D6S receipt process in USAREUR, to determine the unit related and other than unit (automated system) causes for non-posting. Using AMC Logistic Assistance Representative support to collect data at 10 selected USAREUR Supply Support Activities (SSA), AMC-Europe analyzed the complete D6S process from the Standard Army Retail Level Supply System (SARSS-1), through the Direct Support Unit Standard Supply System (DS4) and the Standard Army Intermediate Level Supply Subsystem (SAILS), to the Logistics Intelligence File (LIF).

The overall D6S posting rate for the test receipts was 92 percent. For the eight percent of the materiel receipted for which no D6S was posted to the LIF, six percent was attributed to the SSA and less than two percent to automated systems. A single SSA with a posting rate of 49 percent was responsible for 41 percent of the D6S documents not processed. Highest test posting rate was 98 percent. The results supported the belief that the automated systems would accurately process receipts once correctly entered at the SARSS-1 level.

²⁵D6S is a document entry for acknowledging materiel receipt.

Reduced Buy-Back Initiative. In response to the CINCUSAREUR initiative to reduce the buy-back of assets, AMC-Europe developed a concept to retain OMA Class IX and Class II (maintenance related) excess in a single theater-level record and to store them in the ERF. No credits were allowed for the assets turned-in and those same assets were redistributed at no cost back to USAREUR units. The requisitions would flow from the Supply Support Activities/Materiel Management Centers (SSA/MMC) to the 200th TAMMC, where they would be converted to Materiel Release Orders and transceived directly to the ERF's mainframe computer at New Cumberland Army Depot, PA. The system test using the top 400 USAREUR demanded NSNs was scheduled to begin 9 November 1989. After completion of the test, the line items retained would, over time, be expanded to the top 15,000 USAREUR demanded NSNs.

ERF Credit Return to USAREUR. During FY 89, AMC-Europe resolved a number of issues associated with credit returns to USAREUR. The major issues identified by AMC-Europe, and subsequently resolved, were the Commodity Command Standard System credit computation, establishing an "ERF unique" fund code for the USAREUR Operations and Maintenance Army-level credits, and improving the theater-internal deobligations processing of "free-issues" from the ERF. In FY89 the ERF receipted and redistributed assets valued at \$527M (\$164M serviceable and \$363M unserviceable), an increase of \$84M over FY88. The number of serviceable line items processed by the ERF also increased from 49,000 line items during the first quarter of FY89 to 75,000 line items in the fourth quarter of FY89. For USAREUR serviceable materiel turned in during FY89, 48 percent of the dollar value was returned to USAREUR. This included credits for serviceable assets returned to the wholesale supply system as well as the value of materiel "free-issued."

ERF Inventory Leveling. In FY89, the ERF implemented an automated inventory leveling logic routine. This unique logic was the first within the DA to retain specified levels of supplies at a wholesale-level storage site and ship overages to other CONUS wholesale-level storage sites. The logic provided for retaining up to 180 days of supply of serviceable assets based on the last 12 months USAREUR demand history. As a result of implementing this routine, during FY89, the ERF filled nearly nine percent of the materiel release orders placed by the NICPs while increasing the number of line items evacuated to CONUS for subsequent fills worldwide.

Procurement Policy Advisor. The Directorate's Procurement Management Office (PMO) served as the procurement policy advisor to the CG on all issues related to AMC acquisition in Europe. Issues during 1989 included European Redistribution Facility; Auxiliary Power Unit (APU); Intelligence Electronic Warfare (IEW) Contract Problems; Small Unit Support Vehicle (SUSV); End-user Certificates (EUC); Wiesel; 35mm Ammo; Mainz Army Depot; and End-of-Year Acquisitions. Several issues were resolved during 1989. They included an outstanding irregular procurement action from 1988; revising SOP #14, Local Procurement of Supplies and Services, to incorporate changes directed by U.S. Army Contracting Command; writing policy letters to update the SOP; and giving a briefing to HQ AMC-Europe personnel on procedures for Local Procurement for Supplies and Services.

Mainz Army Depot Contractor Purchasing System Review. During 1989, a team augmented by PMO personnel and led by HQ AMCCOM, performed a follow-up review of the MZAD operating contractor, MIP-Instandsetzungsbetriebe, because it had failed a Contractor Purchasing System Review conducted in 1988 by HQ AMCCOM.

Contracting Officer Representative Training. AMC-Europe had personnel designated as Contracting Officers' Representatives (COR) both at the headquarters and MSCs. PMO maintained a database of all CORs for AMC-Europe contracts. Through coordination with LAO-Europe and Army Logistics Management College (ALMC), PMO developed a briefing on the main issues confronting a COR. The training material used was the ALMC correspondence course training book. The test administered was the standard ALMC test and it was marked electronically by ALMC, which also issued the certificates. During

1989, 110 persons were briefed and tested by PMO. Only nine did not receive ALMC certificates. Personnel from MZAD were included in this training.

Data Base. The database producing the OCONUS Contract Report - European Theater (RCS AMXEU-E #1001) report was upgraded and revised during 1989, with the task being completed on 1 June 1989. Additional information concerning security requirements and weapon systems codes was added, reports were reformatted and new output reports developed as a result of specific questions from the AMC-Europe Security Office. Currently, 12 standardized reports, sorted by various designators, were available.

Wartime Essential Contracts. The Procurement Management Office initiated action to identify essential contracts and those that did not include a transition to war clause through coordination with HQ AMC-Europe offices. Contracts identified were provided to HQ AMC. Concurrently, the MSCs U.S. Army Contract Command Europe (USACCE) were tasked to provide a listing of contracts with special provisions or a war clause. This data was added to the AMC-Europe Contracts Database and was identified in the recurring quarterly report.

Contract in Process Review. A preliminary plan for the contract in process review was developed and approved in February 1989. An Implementation Plan and a Checklist to be used by the requesting official that identified areas of interest were also developed.

Contract Administration Support. The PMO took an active role in the resolution of contract administration support for AMC contracts in the European theater and finalization/implementation of Annex K to the USAREUR/AMC memorandum of understanding, "Procurement support provided by U.S. Army Europe (USAREUR) contracting activities to U.S. Army Materiel Command (AMC)." The HQ AMC Deputy Chief of Staff for Procurement concurred on the revised draft Annex K to the USAREUR/AMC MOU in May 89. In July 1989, HQ AMC-Europe and USAREUR signed the MOU Annex.

Directorate for Resource Management

Program and Budget Advisory Committee (PBAC). In an effort to promote the efficient and effective use of resources, AMC-Europe established its PBAC in FY89, the objectives of which were to ensure identification and prioritization of requirements, to promote the integration and management of available resources, and to provide resourcing recommendations to the CG, AMC-Europe. The PBAC was chaired by the Chief of Staff and all the directors participated as voting members. Other AMC elements or organizations could attend, based on their interest.

Recyclable Materiels Program. Annex I to the AMC/USAREUR Memorandum of Understanding, originally concluded on 31 December 1987, specified AMC and USAREUR responsibilities for the operation of the MZAD recycling program. Under this agreement, net proceeds (i.e., proceeds after recovery of operating costs) had been distributed to the Mainz Military Community, with up to 50 percent going to Morale, Welfare and Recreation (MWR) purposes, and the balance to energy conservation, pollution abatement and safety projects. During FY89, the HQ USAREUR Command Group expressed the view that these net proceeds should be distributed on a theater-wide basis, since the source of the materiels recycled (equipment overhauled or repaired at MZAD) came from units throughout the theater. Subsequent research and staff coordination revealed that several other USAREUR community recycling programs also benefitted from recyclable sources outside the community.

A revised Annex I was concluded on 16 May 1989 which specified a new role for MZAD's participation in a USAREUR community recycling program. Under this revised agreement, and a new USAREUR operating procedure published 16 May 1989, net proceeds were withdrawn from recycling programs at MZAD and three specific USAREUR community programs, with the MWR portion allocated

in accordance with a theater-wide distribution formula and project funds allocated based on approval of candidate projects by a USAREUR Recycling Board. This board, which included an AMC-Europe representative as a voting member, met for the first time on 1 June 1989, and was scheduled to meet quarterly thereafter.

Intraservice Support Agreement (ISSA) with 5th Signal Command. After a year of negotiation, an ISSA between AMC-Europe and the 5th Signal Command was concluded on 30 May 89. This agreement was based on the overall memorandum of understanding between AMC and ISC concluded on 23 January 1986, and the subsequent transfer of manpower authorizations from AMC-Europe to the 5th Signal Command in April 1987, as part of the Information Mission Area realignment. The ISSA specified the responsibilities of AMC-Europe and the 5th Signal Command, including support provided by the AMC-Europe Director of Information Management (DOIM) and the DOIM staff, functions to be performed by AMC-Europe, rating relationships, and reimbursable funding procedures.

Chief, Security, Plans and Operations Office

WINTEX-CIMEX 89 Exercise. During WINTEX-CIMEX 89, AMC-Europe deployed cells to USAREUR DCSLOG and to 200th TAMMC. This integration of AMC elements into the theater's logistic structure was implemented to provide the theater the capability to have direct access to the wholesale and retail supply system and AMC activities in theater. This integration proved valuable to the theater's logistical support structure, by providing visibility of AMC's major subordinate commands in their support of USAREUR sustainment.

European AVCRAD, Brussels, Belgium. The 1107th Aviation Classification and Repair Activity Depot expanded its warm base capability since operations began in January 1988. It operated as an AVSCOM General Support repair facility with depot capability and as a Reserve Storage Activity for the National Guard Bureau's aviation assets in Europe. The CONUS-based 1107th AVCRAD had three training units that participated in its Overseas Deployment program to Brussels, Belgium: the California, Connecticut, and Missouri AVCRADs.

Mobilization Table of Distribution and Allowances (MOBTDA)/Transition To War Plan Update. AMC-Europe MOBTDA, Section II-Personnel, was revised. It stated the mobilization personnel requirements needed to execute the AMC-Europe Transition-to-War Plan, Change 2. This revised MOBTDA was a significant departure from the last approved AMC-Europe MOBTDA. The major changes included the breakout of AMC-Europe during mobilization and the addition of external AMC-Europe agencies with valid wartime missions. In addition to revising Section II-Personnel, input was collected on any unique equipment requirements needed and these items will be included in Section III (Equipment) of the MOBTDA.

Wartime/Mobilization Support of AMC-Europe. An annex to the basic Memorandum of Understanding between USAREUR and AMC-Europe was drafted, specifying support requirements for AMC-Europe during wartime or mobilization. The wartime/mobilization requirements listed in the Annex were the minimum required to support AMC-Europe's wartime mobilization mission as outlined on AMC-Europe's Transition to-War Plan. The annex identified responsibility for transportation requirements to ensure AMC-Europe's wartime mission accomplishment.

Training Ammunition. HQ AMC-Europe, through coordination with USAREUR/7th Army, obtained direct on-line access to the Training Ammunition Management System (TAMIS). In conjunction with the TAMIS system, AMC-Europe implemented the one-pot concept for the management of its annual training ammunition requirements. The one-pot concept provided for single-source management and allocation of training ammunition instead of the management of several separate accounts.

Training. HQ, AMC-Europe had assumed command-wide responsibility for central management of training quotas for the 7th Army Combined Army Training Center (7A CATC) and USAREUR-related civilian and military personnel training for its activities in-theater. AMC-Europe, through attendance at 7A CATC annual training conference, coordinated all annual training requirements. AMC-Europe's implementation of the automated Army Inventory Management System in FY90, would allow direct class enrollments and control over the enrollment process, help eliminate shortfalls, provide for better use of available training, eliminate wasted manhours, and, with the Standard Installation/Division Personnel System (SIDPERS) interface, would eventually allow for accurate information being posted to military personnel records.

Corporate Wellness Program. AMC-Europe had completed two phases of its initial three-phase wellness program which had been initiated in FY88. Phase I, Fitness Evaluation was conducted by the 130th Station Hospital, Heidelberg, Germany. Approximately 150 AMC-Europe employees, military and civilian, participated. In February 1989, Phase II of the program, Health Risk Screening Analysis, was conducted with approximately 138 AMC-Europe personnel being screened. Final statistical data from the screening process was provided in March 1989. AMC-Europe and 130th Station Hospital received PAO coverage from the Armed Forces Network during the initiation of this program. Phase III of the Wellness program began in June 1989 with Volksmarching and would continue with the development of Jazzercise and Aerobics programs to be conducted in the future.

Quality Assurance Office

Quality Deficiency Reports/Equipment Improvement Recommendations (QDR/EIR). The Deficiency Reporting System had a problem with the timeliness of the QDR/EIR submission. To process QDR/EIR more proficiently, input/output forms were developed that could be used with the ENABLE and INFORMIX Database Management Systems and sent via the Defense Data Network (DDN). Testing had shown that overall QDR/EIR processing could be reduced by as much as 55 days using this new system. These database input/output forms were distributed on floppy diskettes to all Major Subordinate Command Representatives (SCR), the Logistics Assistance Office (LAO) in Europe, and interested USAREUR personnel. An instruction pamphlet was developed to provide instructions on the automated QDR/EIR submission. It also provided useful information regarding European Terminal Access Control phone numbers and how to access the Deficiency Reporting Database.

Functional System Requirement Specification for the Deficiency Reporting System in Europe. A functional system requirement specification was developed and staffed with 200th TAMMC, AMC-Europe, and HQ AMC that would provide a Deficiency Reporting System that integrated deficiency reporting with the Supply System, utilizing a "real-time" deficiency reporting method with timely customer feedback. It also provided retail managers with up-to-date management information regarding quality trends and materiel maintenance problems in-theater.

HQ AMC indicated that many of the needs identified in the specification were being addressed. Plans and efforts to increase speed and ease of deficiency reporting and to bring deficiency reporting on-line with supply procedures were being studied.

Office of the Inspector General

Command Inspection Program (CIP). The CG, AMC-Europe, implemented a Command Inspection Program that became effective 13 January 1989. AR 1-201, *Administration: Army Inspection Policy*, required Army organizations to establish CIPs, the focus of which was the administration of a "free" inspection to all newly assigned company/detachment commanders. This inspection provided a snapshot of the status of the unit at a given point in time. The results could be used to help develop or modify the goals and objectives of the inspected commander's Officer Evaluation Report Support Form, and might serve as a

benchmark to determine how well the commander performed during the rating period. AMC-Europe Policy Statement No. 24 established the CIP and made the AMC-Europe Inspector General responsible for oversight over the program.

Public Affairs Office

Update on Press Coverage of Intermediate-Range Nuclear Forces (INF) Treaty Implementation. There was major international press coverage (Eastern and Western Bloc) of the first eliminations of the Pershing II erector launchers in Western Europe at AMC's Equipment Maintenance Center-Hausen in Frankfurt in early FY89, but there had been almost no press interest in covering subsequent eliminations of the launchers there since that time. Considerable media interest was anticipated, however, for the final eliminations of those launchers in 1991. AMC-Europe Public Affairs would make all necessary preparations to ensure the success of what is anticipated to be a major media event.

Press Conferences on "Hazardous Materials." Two very successful press conferences were conducted in early FY89. The first at Nahbollenbach, Germany, at the ERF, focused on non-hazardous radioactive materials (e.g. gauges/radio tubes) temporarily held there pending their redistribution or return to the originator. The second, in Pirmasens, Germany, centered on the USAREUR Radioactive Waste Processing Facility (collocated with the 517th Maintenance Battalion's RADIAC instrument calibration facility). Recurring incorrect local news stories as well as the ARD's (German national television) request for coverage drove the event. Resulting television coverage was objective (significant because ARD was normally leftist slanted). Print media at Pirmasens (none at Nahbollenbach) was very positive.

Army Times Article on AMC-Europe Operations. The *Army Times* published a two-page article on AMC-Europe's operations in May focusing on the M1A1 tank, Bradley Fighting Vehicle, Multiple Launch Rocket System (MLRS), the Apache, and tactical vehicles. The article was comprehensive and objective.

News Coverage of Overseas Deployment Training at AVCRAD. AMC-Europe Public Affairs arranged for and escorted a television crew to the European AVCRAD in Brussels, Belgium, to cover a major overseas deployment of the Illinois Army National Guard to Belgium and to West Germany (where they participated in Caravan Guard) as part of their annual training. This was the first time a company-size National Guard unit deployed to Europe and drew a set of aircraft which had been stored in Belgium. Public Affairs produced a television news story on this event that was aired on AFN News and on the European Command extended report in September 1989. A modified version of this television news story was also aired in Illinois.

AMC-Europe Mission Video. AMC-Europe Public Affairs produced a major revision of AMC-Europe's mission video in early FY89, portraying the diverse contributions of AMC-Europe to the force modernization, readiness, and sustainment of the U.S. Army in Europe.

Headquarters Detachment

Development of an Automated Property Book and Supply Procedures. AMC-Europe's Property Book Officer (PBO) changed during FY89. The new PBO, in compliance with the CG, AMC-Europe's directive, initiated a massive program to update the property book and hand receipt files and to automate the property book and accountability procedures. This project was completed in October 1989 with the active participation and support of all elements of the Command.

Chapter V

Security Assistance

Logistic support to the international community of allies and friends, primarily through the medium of Foreign Military Sales (FMS), continued in 1989. Its main agent in the U.S. Army was the U.S. Army Security Affairs Command, which included the project manager for Saudi Arabian National Guard (PM, SANG) Modernization.

Also active in the field of international security assistance and formerly an element of USASAC, the Office of International Cooperative Programs oversaw international programs dealing with research, development and associated topics. Its activities are covered within the chapter on materiel acquisition.

U.S. Army Security Affairs Command

Organization¹ and Personnel

The U.S. Army Security Affairs Command (USASAC) is both a major subordinate command of AMC and a staff element thereof. The commanding general of USASAC, Major General Thomas G. Lightner, who assumed command in June 1988, also held the staff position of Deputy Chief of Staff for International Security Partnerships.² The deputy commanding general (mobilization augmentation) position was filled by Brigadier General Robert L. Ruth. The USASAC deputy, a Senior Executive Service civilian, was Mr. Paul Donovan, who was also the Assistant Deputy Chief of Staff for International Security Partnerships. Geographic centers of the command were unchanged: Alexandria, Virginia; New Cumberland, Pennsylvania; and Riyadh, Saudi Arabia.

Directorates and offices located in Alexandria included three regional directorates (Europe, Mideast/Africa, and Asia/Pacific/Americas); the Policy, Plans, and Operational Support Directorate; the Directorate for Resource Management; the Office for International Industrial Cooperation; and the Office of the Program Manager for Security Assistance Automation, Army. Also in the Alexandria location was the Training and Doctrine Command (TRADOC) Security Assistance Training, and the Washington Field Office of PM, SANG. There were 10 military and 148 civilians assigned to the Alexandria headquarters.

The New Cumberland element of USASAC, with 1 military and 397 civilian personnel, was headed by the Deputy for Operations, an O-6 position, filled by Colonel William C. Brown. The New Cumberland organization reflected its operational orientation. Directorates and offices included the Europe/Africa Directorate, the Asia/Pacific/Mideast/Americas Directorate, the Directorate for Logistics Support, the Directorate for Product Assurance, the Security Assistance Support Directorate for Information

¹An organization chart is provided at the end of the volume.

²USASAC FY89 Historical Submission. Hereafter, information in this chapter is from this source unless otherwise noted.

Management, and the Egyptian Project Office. Some elements of the Resource Management Directorate of the command were located in New Cumberland.

The element located in Saudi Arabia was the Project Manager, Saudi Arabian National Guard Modernization Program, under Brigadier General Waldo D. Freeman. The PM, SANG's activities are discussed below.

Manpower Authorization

The following table reflects the manpower authorization of USASAC, which remained unchanged during FY89:

	TOTAL	MILITARY	CIVILIAN
USASAC	588	11	577
PM, SANG	167	45	122
TOTAL	755	56	699

Command Administrative Office

On 1 October 1988 a new command administrative office was established at the initiative of MG Lightner. The restructuring of the two existing administrative offices into a single organization established a single command-wide perspective for administrative work and increased the quantity and quality of administrative service to the command without increasing personnel resources, which stood at an authorized level of 16 spaces, by the transfer of two spaces from New Cumberland.

Activities of the Directorate for Europe

Austria. Requested a Letter of Offer, valued at \$29.6 million, for 24 M109A5 155mm howitzers.

Canada. Budget changes delayed the possible purchase of M1A1 Abrams Tank.

Denmark. Reviewing the possible purchase of the Stinger missiles.

Germany. Requested a Letter of Offer to conduct testing of German-produced DM642, 155mm projectiles (10 lots - 500 rounds). Testing began in February 1989 and will continue through 1991 at Jefferson Proving Ground, Indiana. Also requested was a Letter of Acceptance (LOA) for helicopter support to the German Army for a recruitment film. Helicopter support was provided by the California Air National Guard at Los Alimitos, California.

Greece. Indicated a growing interest in a closer military to military relationship. The Chief of the Hellenic Army Staff, LTG Verivakis, attended the September 1989 contract management review and stated his army's priorities were 105mm ammunition, armored personnel carriers and helicopters. Accepted was an FMS case for 500 STINGERS (RMP less module) and received were fifty M48A5 tanks under the Southern Region Amendment.

Italy. Submitted a request for 500 excess M151A2 jeeps and accepted an FMS case for 20 TOW missiles for training. The missiles have been shipped to Italy. HQDA has approved another FMS case of 400 TOW launch motors and inert warheads for training purposes.

The Netherlands. Accepted delivery of 18 Armored Vehicle Mounted Rocket Launchers, bringing the Dutch fleet of the vehicles to twenty-two. This is the first European NATO country outside of the consortium to acquire the Multiple Launch Rocket System. The Netherlands accepted a Letter of Offer to acquire the residual rights of all existing Army Military Assistance Program materiel in the Netherlands, valued at \$750,000. This action transferred the materiel from the U.S. Government to the Royal Netherlands Army.

Norway. Requested renewal of the leases for the six batteries of I-Hawk equipment for an additional five years, at a cost of \$17.5 million.

Portugal. Tentatively expressed a desire to purchase several batteries of HAWK.

Spain. Decided to upgrade its M109/M109A1 howitzers to the M109A3 configuration. An FMS case for modification kits to accomplish the upgrade is now pending.

Sweden. Leased two M1A1 Abrams tanks for a six month test in Sweden. The test is being conducted between the M1A1, German Leopard II and Swedish tanks. Swedish parliamentary decision is to be made in 1990 for acquisition of 250-350 tanks.

Switzerland. The Swiss parliament approved the STINGER coproduction program, which will be spread over a period of 7 years and will amount to \$450 million. The Memorandum of Understanding would be signed in October 1989. Initial production deliveries for TOW-2 missiles and equipment began in May 1989. Five hundred sixteen TOW-2 missiles and five hundred sixteen TOW-2A were delivered in 1989 for a value of \$400 million. Switzerland was granted an exception to the National Defense Policy for the testing, evaluation and acquisition of the Bradley Fighting Vehicle. A contract between FMC and Switzerland for retrofit kits to upgrade 400 M113A1 APCs (Armored Personnel Carriers) was signed in November 1989. The Swiss will consider further retrofit of their remaining 1600 M113A1s and/or acquisition of the Bradley Fighting Vehicle or a foreign equivalent. Production of an additional 15,000 DRAGON missiles was planned. This will increase production by Switzerland to 34,000. Production and procurement through FMS will total 76,000 for a total program value of \$300 million.

Turkey. The first six Multiple Launch Rocket System fire units were delivered to Turkey in September 1989. The units participated in the Turkish National Day parade in October 1989. Contracts were awarded in December 1989 to provide Turkey fifteen additional UH-1H helicopters, to be delivered by components and assembled in Turkey.

United Kingdom. Discussions with General Dynamics on the possible phase or coproduction of the M1A1 Abrams tank with support coming through FMS channels were begun.

Activities of the Directorate of Asia/Pacific/Americas

People's Republic of China. In June 1989 presidential sanctions resulted in suspension of new business and program deliveries. The Large Caliber Ammunition Modernization program involving set-up of production lines for fuzes and detonators was essentially delivered complete. However, equipment installation and testing were still in process when the suspension was imposed. Two AN/TPQ-37 Artillery Locating Radars were deployed in May 1988 with two more scheduled to be available in May 1990.

Japan. The program consisted mostly of coproduction of major systems with FMS cases to support annual service practice for NIKE and HAWK and Initial Operational Test and Evaluation for PATRIOT. Exploratory discussion involving coproduction of multiple launched rocket systems continued.

Pakistan. The Government of Pakistan was unhappy with the overhaul of the second set of 100 M48A5 tanks. Although the overhaul met FMS requirements, the U.S. agreed to replace parts which could possibly be attributed to deficiencies in the overhaul. An agreement was reached on parts to be provided and their shipment will be completed in March 1990. Pakistan felt that they received 100 used AN/UAS-12 night sights instead of new ones. Arrangements have been made to exchange these AN/UAS-12 night sights for AN/UAS-12A night sights. Pakistan will pay the difference between the cost of the sights; the U.S. will pay transportation and Quality Assurance Team costs. The trunnion bracket problem which delayed delivery of 37 M109A2 howitzers until late December 1989 and suspended firing of 15 howitzers already received was resolved. A letter of contract will be awarded to General Dynamics Services Company in October 1989 for technical assistance to establish an M-Series Heavy Rebuild Facility in Taxila, Pakistan.

Korea. Operational readiness of the Korean helicopter fleet has become an increasingly difficult task as the age of the aircraft increases. In an effort to upgrade the operational readiness rate and increase support, all critical repair parts and repair and return requests can be requisitioned under 03 priority as authorized by HQDA. The upgrading of priority was previously handled on a case-by-case basis. In early September 1989 the Korean Army requested instruction in the proper requisition procedure for materiel that causes aircraft to be non-mission capable. The Joint U.S. Military Advisory Group, Korea offered to undertake the training of Korean counterparts. Non-Mission Capable Status (NMCS) requisitioning is essential to increased operational readiness of the Korean helicopter fleet.

Korea requested 109 UH-1H helicopters from projected excess assets that have become available for foreign sale due to changing U.S. requirements. Due to a decreased operational readiness rate of the Korean helicopter fleet and repeated requests for UH-1H helicopters during the year, HQDA has authorized the sale of 26 aircraft. Sixteen of the helicopters offered will be made available early in 1990. The remaining ten will be made available as soon as possible thereafter.

Guatemala. A Sole Source Request for Guatemalan Army Boot Factory was approved, and contract was awarded to Ro Search, Inc., in May 1989. A statement of urgency emphasized the need by the Guatemalan Army, whose combat capability was being severely hampered due to lack of proper footwear. Delivery was completed in September 1989. A second case was written in May 1989 to be let out competitively. To date, it has not been awarded, and some items need to be finalized before it goes out for competitive bidding.

An FMS Case consisting in part of 32 Navistar Commercial International, Model 1654, 6-Ton Truck Chassis, was implemented on 19 December 1989 and delivery of 32 trucks was completed on 13 June 1989. Everyone, including the U.S. Ambassador and the Government of Guatemala, was extremely pleased for the expeditious manner in which this case was handled.

Jamaica. In response to Presidential determination - #89-6 and in accordance with Section 506A of the Foreign Assistance Act of 1961, \$10 million worth of supplies and services were authorized for the Jamaican Humanitarian Program to commence October 1988. An expiration date of 120 days was applied to this program. Four no cost lease UH-1H helicopters and associated spare parts were provided. The remaining requested items included construction materiel, medical items, vehicles, communication equipment and subsistence items. At the conclusion of the program on 23 February 1989, 843 requisitions were processed for a total of \$4,127,642.12 including the transportation cost of \$1,066.00. Jamaica expressed its deep appreciation to the U.S. during this crisis.

Mexico. On 15 June 1989 the Acquisition Chief for the Secretary of Defense of Mexico signed/accepted a Foreign Military Sales Case for 200 High Mobility Multipurpose Wheeled Vehicles (HMMWV), with an approximate value of \$7 million. This was the largest FMS Case accept by Mexico since World War II. An additional FMS Case for 100 HMMWVs has been requested.

Ecuador. The Government of Ecuador requested a Foreign Military Sales Case to procure ninety-five M998 1-1/4 Ton HMMWVs 16 May 1989. Accepted on 17 August 1989, this option to the current contract allowed a cost savings to be realized by Ecuador.

Bolivia. On 3 April 1989 Bolivia was advised that the Shining Path Terrorist activity in Peru planned to attack and destroy the eighty 2-1/2 Ton trucks procured for Bolivia through FMS and scheduled to be off-loaded in Motorani, Peru on 5 April 1989. Bolivia urgently requested that the trucks, which were shipped from Florida on 25 March 1989 and were currently on the high seas, be diverted to Arica, Chile for safety purposes. With close coordination between USASAC and the Lyhes Shipping Company, the trucks were diverted at sea to Chile. They arrived on 6 April 1989 to the great satisfaction of Bolivia.

Bolivia has been identified as one of the three Latin American recipients of Andean Initiative Counternarcotic Funds in FY90. The exact dollar amount for Bolivia was not determined in CY89. Bolivia is expected to receive the funds, and to begin to request counternarcotic FMS cases, in early CY90.

In CY89 Bolivia's Trust Fund was in arrears. Because of FMS financial problems, Bolivia was not allowed by DSAA (Defense Security Assistance Agency) to receive or sign any FMS cases during the last quarter of CY89.

Honduras. The entire Security Assistance Program is funded by MAP (Military Assistance Program). Deliveries consisted of vehicles such as tractor-trailer transporters, GM Blazers, Ford 250 pick-ups, ammunition, weapons, rations and troop support items. Honduras was subjected to sanctions under the Brooke amendment several times, which caused delays in the program.

Costa Rica. The Contractor Supported International Parts System has proven to be an effective means for providing non-standard repair parts. In its second complete year, the program has been successful and the preparations and coordination for a new contract have been accomplished. The new contract will be ready for implementation in FY90. Costa Rica has not received any MAP funds since 1986.

Argentina. Seven materiel, one repair and return, and two training FMS cases to upgrade and repair armored personnel carriers and helicopters were written in CY88. All of these cases were signed in early CY89, but due to Argentina's financial situation, they will, with the exception of the two training cases, not be funded and implemented until late October 1989. Modifications for these cases were written to update payment schedules and make changes necessitated by the long delay between signing and funding the cases. USASAC's position is that no requisitions will be honored on these cases until at least one or both training cases are funded. Argentina's tenuous financial situation continues to be a concern, especially regarding Argentina's ability to keep up timely payments.

Colombia. Received \$7.1 million of MAP funds in FY89 to purchase (in conjunction with cash financing obtained by the country) helicopters and related components. On 25 August 1989, a Presidential determination to support Colombia's fight against drug traffickers authorized \$35.5 million, under the 1961 Foreign Assistance Act, Section 506A, to provide defense materiel To Colombian military and judicial authorities. Materiel provided to date includes troop support items such as clothing, canteens, field frames and packs, as well as UH-1H helicopters, vehicles, weapons and ammunition. All materiel must be in the delivery pipeline by 23 December 1989. The U.S. Ambassador to Colombia and Colombian authorities expressed their satisfaction with the Army's response.

Singapore. The Government of Singapore finalized the \$30.6 million purchase from Special Defense Acquisition Funds of three AN/TPQ-37 artillery locating radars scheduled for delivery during March 1991. The radars will be utilized to enhance the AN/TPQ-36 mortar locating radar in country.

The Government of Singapore completed the purchase of one hundred TOW 2A missiles during February 1990 for delivery in two increments--October 1990 for 32 and 1st Quarter FY92 for the remaining 68. The purchase totals \$1.3 million. Various systems are in the planning state; however, the prime consideration is being given to enhancement of their I-HAWK System. The Government of Singapore is also giving consideration to purchase of defense equipment from commercial U.S. and other channels.

Thailand. The Royal Thai Army has received various vehicles such as semi-trailers, 2-1/2 ton trucks, 5-ton tractors, and dump trucks among others, through Foreign Military Sales during 1989. A total of 125 M998 HMMWVs were also fielded in Thailand.

Philippines. The FY89 FMS program for the Philippines was designed to enhance counterinsurgency-oriented tactical mobility (air and ground), tactical communications, and logistical capabilities. The emphasis was on improving existing assets through better maintenance and logistic support. Significant deliveries included 1350 radios, trucks, engineer equipment 240,000 M1 rifles, and computer systems. Two FMS cases for soldier support items (boots - \$2.0 million and uniforms - \$3.1 million) were implemented. The Subic Naval Procurement Office will purchase items manufactured in the Philippines, which further supports the local economy.

Nepal. One hundred twenty AN/PRC-77 radios were delivered during November 1989. The total purchase amounted to approximately \$400,000 and represents the first FMS purchase of any significant equipment. The purchase of a second quantity of 120 is pending satisfaction with the first quantity. Source of the radios is Special Defense Acquisition Funds.

Australia. In FY89 Australia requested 53 FMS cases which included a variety of materiel of limited U.S. dollar value. Australia places a major emphasis on an off-set arrangement in return for defense purchases. This objective will have an impact on any future FMS purchases. The relaxation of tension between East and West will also tend to influence what and how much FMS materiel they will purchase. Among significant cases were illuminators, fuzes, 25mm ammunition for light armored vehicles, helicopter spare parts and smoke grenades.

New Zealand. Despite changes in the nature of the security relationship with New Zealand, which is no longer a member of the ANZUS (Australia/New Zealand/United States) Pact as a result of the government non-nuclear policy, the U.S. continues to have an interest in helping it to maintain its existing military equipment, its air and naval surveillance capabilities, and to retain its capability to play a role in Southeast Asia and Pacific security. New Zealand has a total of 59 active cases for a value of \$26 million. One major case for fuzes was signed and implemented during the time period. New Zealand has also expressed an interest in purchasing U.S. equipment as U.S. forces are withdrawn from Europe.

Activities of the Directorate for Mideast/Africa

The Mideast/Africa Directorate continued with COL Robert A. Goodwin as Director of its three divisions (Arabian Peninsula, North Africa, Mideast/Africa). During FY89, the Directorate was responsible for security assistance activities in over 40 countries and implemented new cases valued at \$3.48 billion.

Arabian Peninsula Division. Responsible for providing security assistance for Saudi Arabia, Yemen, Oman, United Arab Emirates, Bahrain and Qatar, conducted the following activities:

o **Saudi Arabia.** retained the distinction of being the premier U.S. Army cash sales customer with the initiation of cases for 200 Bradley Fighting Vehicles (\$550 million), thirteen UH-60 Desert Hawk Helicopters (\$399 million), mortar and artillery locating radars (\$115 million), a variety of tactical wheeled vehicles (\$5.2 million) as well as initiating a program to convert M60A1 tanks to the M60A3 model. At the end of the fiscal year, efforts were directed to present an LOA to the Saudi Government to purchase 315 M1A2 Abrams Tanks at a value exceeding \$3 billion.

o **Yemen.** implemented cases valued at \$1.6 million. Yemen has heretofore been dependent upon Saudi Arabian funding to support spare parts acquisition; a new case was implemented using recouped Yemen case funds which will permit requisitioning and receiving spare parts directly.

o **United Arab Emirates (UAE).** The UAE's desire to acquire an attack helicopter was enhanced by a highly successful AH-64 APACHE demonstration in August. The UAE are reserving source selection until evaluation is conducted of other competing candidates.

o **Bahrain.** In July, Bahrain signed a case to purchase seven MLRS units complete with ammunition, communications equipment and associated training, for a value of \$89 million. As the year ended, Congress had been notified that Bahrain intended to purchase M113 armored personnel carriers.

North Africa Division. Provides security assistance for Egypt, Tunisia, Niger and Algeria. In addition, security assistance program management responsibility for Chad, Morocco and Kuwait was transferred to the division in FY89, increasing its responsibility to over 35 countries. Other countries serviced by this division were Jordan, Kenya, Somalia, Botswana, Djibouti, Senegal, Zaire and the remaining pro-western sub-Saharan African countries.

Security assistance programs in this division remained relatively small, with the exception of Egypt. Several countries were subjected to Brooke sanctions for failure to make required payments. Somalia, Sudan, Liberia, Senegal, Cameroon, and Zaire were impacted. However, other countries did receive equipment: Bell 500 Helicopters, tank transporters, earth-moving equipment for Kenya; CESSNA Aircraft for Guinea and Liberia. Due to decreased purchasing capability, several African countries began procuring spare parts and maintenance capabilities as opposed to procuring new equipment.

o **Egypt.** continued as recipient of the largest amount of non-repayable FMS credit within the Directorate. During FY89, \$1.3 billion in FMS credit was received and 65 new cases were implemented worth \$2.6 billion.

Significant activities were:

- * Implementation of cases for the acquisition of 150 HAWK missiles and 7400 TOW 2A missiles;
- * Congressional notification to acquire twenty-four AH-64 APACHE helicopters;
- * Delivery of the final 18 CHAPARRAL fire units;
- * Ammendment of the M1A1 tank coproduction Memorandum of Understanding to permit Egypt to coproduce the M1A1 120mm cannons and cannon mounts;
- * Achievement of full operational capabilty (March 1989) of the Armament Authority Computer Center, which opened in March 1988;
- * Significant progress in facilitating the Zone Workshop. At year's end, construction of the Egyptian tank plant appeared to be on schedule.

- o **Tunisia.** received 236 HMMWVs during FY89. To ensure proper maintenance of these and other recently acquired equipment, Tunisia began developing a Wheeled and Track Vehicle Maintenance Depot with U.S. assistance.

- o **Niger.** established LOAs to support parachute equipment.

Resource Management

Total Quality Management

The U.S. Army Security Affairs Command has taken steps to implement DOD's Total Quality Management (TQM) philosophy, which emphasizes continuous improvement of an organization's management and business processes, and focuses on satisfying an organization's customers by improving the quality of products and services. Along with the philosophy, TQM includes a set of tools to use when identifying and solving long standing management problems. It also establishes a framework in which problems that cross organization boundaries can be solved.

USASAC plans to implement TQM include the establishment of an Executive Steering Group, which will identify those quality issues which need to be addressed first. This group will be composed of MG Lightner, the USASAC Commander, and the Directors. The group will direct the formation of both permanent and ad hoc Process Action Teams to address problems affecting the quality of USASAC's service. These teams will have a cross-functional orientation so that problems can be identified and corrective action initiated. It is expected that the composition of the problem solving teams will eventually expand to include to entire FMS community.³ A Report of Discrepancy team was formed in USASAC-NCAD to improve the processing and management of discrepancies within the command.

Pricing Study

The Resource Management Directorate completed a pricing study, which reviewed pricing policies and procedures for Foreign Military Sales. The conclusions and recommendations of the Pricing Study were considered for inclusion in the Fair Pricing Legislation contained in the FY90 DOD Appropriation Act (Public Law 101-65).

Financial Case Management System (FCMS)

The 1983 Department of Defense Appropriation Act directed that a case manager be appointed, who would be responsible for all logistical and financial aspects of management for each active assigned case. Various reviews and analyses of FMS operations have disclosed serious internal control weaknesses in the FMS financial process, which have inhibited the ability to effectively manage cases.

The Department of the Army directed USASAC in early 1989 to develop new systems that would strengthen internal controls over the financial process. The Finance and Accounting Division of the Directorate for Resource Management was given direct responsibility for both system development and operations. The development effort was initiated in March 1989 and should be completed by mid 1990. FCMS will be transitioned to an operational mode during 1990 as individual system elements are completed, tested and approved.

³SAO Bulletin, Sep 89, page 9.

The FCMS is a comprehensive system of financial controls, including elements that test and validate internal controls in the areas of cash management, data base reconciliation and accounting. When FCMS becomes operational it will isolate financial problems and provide case managers, through a series of performance indicators, an evaluation of the financial health of their cases. It will also form the basis for the submission of annual financial status reports to the Department of the Army.

Foreign Military Sales Performance Cash Reconciliation

During FY88 (January 1988), the Assistant Secretary of Defense (Comptroller) directed a major reconciliation of Foreign Military Sales records within the Department of Defense. Significant discrepancies which have continued to exist between FMS trust fund cash balances and the case balance reported to the customer countries via their quarterly billing statement, visible at congressional level, prompted the combined DOD reconciliation.

Six-member reconciliation teams representing all AMC Major Subordinate Commands and the U.S. Army Security Affairs Command at New Cumberland Army Depot were formed. Their objectives were the resolution of past discrepancies and the establishment of a management structure to minimize future discrepancies. A projected completion date was established for January 1989. The net total of discrepancies as of 31 December 1987 was \$99 million. However, the sum total of the individual cash overages/shortages was estimated at \$5 billion.

The major result of the reconciliation project was the uploading of Army disbursement values, which was accomplished during the 2nd Quarter of FY89. A minimal reconciliation effort was employed at most MSCs from May to October 1989. Afterwards, the MSCs were directed to concentrate on all out-of-balance conditions as displayed on the 29 April 1989 Cash Performance Case Variance Report.

Policy, Plans and Operational Support Activities

Zero-based quality assurance teams, comprised of equipment experts, were limited to the minimum essential number. This requirement was dictated by reduced operating funds and good management.

A task force (USASAC/AMC) was formed to develop a streamlined concept to provide a direct exchange procedure by which a foreign customer would exchange a reparable item for a serviceable one and pay an appropriate amount to cover the item cost. Legislative changes to allow such procedures were considered in order to allay legal concerns.

Contractor-operated non-standard item (NSI) support for foreign customers was established. Arrangements were made with the Air Force to include Army aviation NSI support with their NSI support plans. The idea was to piggy-back on the Air Force efforts (which were nearing completion). For non-aviation items, the CG, U.S. Army Tank-Automotive Command (TACOM) accepted the challenge to develop an NSI support procedure.

Security Assistance Automation

Changes to software, hardware and new functional aspects, resulted in a decision to put the SA3 computer based training course on personal computers in lieu of Intel mini computers.

The TACOM pricing system was extended to all of the commodity commands as a stand-alone pricing system. It is now called the AMC standard FMS pricing system.

Reports of Discrepancy (RODs), the first Security Assistance system selected for development as artificial intelligence (expert systems) moved towards reality. It will provide technicians with

recommendations for proper initial disposition of RODs. An advantage of expert systems is having all the regulations and knowledge processes in one place.

An automated system for processing complete changes to standard notes was developed, along with some minor enhancements to the case development and laser printing process.

The security assistance dedicated facsimile network (SADFAN) continued to grow, with the addition of several new locations overseas. The network now has over 100 machines throughout the world.

A contract was awarded for the design of the restructuring of security assistance automation. Development of the statement of work for the programming and documentation phases has begun.

The Directorate of Logistics Support at New Cumberland successfully implemented a computerized process, called the Case Evaluation Profile System, to provide daily evaluations of the status of each FMS case event.

International Industrial Cooperation

The programs managed by the Office for International Industrial Cooperation (OIIC) continued to grow as foreign governments/organizations recognized the benefits of and increased their activity in cooperative production programs and direct commercial sales. The office's major missions are to manage the Army's munitions control and coproduction programs and to ensure that security assistance related technology disclosure decisions are in accordance with DOD regulations and policies.

Munitions Control. In FY89, 5478 munitions cases were received and reviewed, with positions provided to DOD. Representatives from OIIC participated on the steering group for the High Technology Export Analysis and Control System for the 1990s (HI-TRAC 90), which will have a major impact on the process of reviewing export license applications and other means of technology transfer.

Coproduction. Seven coproduction Memorandums of Understanding and Implementing Arrangements were concluded: Multiple Launch Rocket System with Turkey; M109 Howitzer and STINGER with Switzerland; Improved HAWK, HYDRA 70 Rocket System and UH-60 Helicopter with Japan; and M1A1 tank with Egypt.

The major project initiated in FY89 was the M1A1 tank coproduction program with Egypt. The MOU was signed by the government of Egypt on 1 November 1988, later amended to include the main armament system, and signed 7 August 1989. Currently, a draft MOU for the 120mm ammunition is being staffed.

The OIIC was also actively involved in developing and negotiating programs for the M109 Howitzer Improvement Program with Israel, Modular Forward Looking Infrared components with Germany and the Netherlands, and the M483A1/M864 155mm projectiles with the Netherlands. Also included are potential coproduction programs for the M9 Armored Combat Earthmover with Korea and ammunition production with Brazil.

Technology Disclosure. Requests for 2,750 restricted and classified publications from 61 foreign countries were reviewed, involving coordination with 21 agencies and commands. Fifty technical data package releases for 16 countries were processed, of which 17 allowed production in foreign countries, 9 were for operation and maintenance of systems previously sold, and 24 were denied.

Project Manager Saudi Arabian National Guard (PM, SANG) Modernization Program

Mission

The mission of the Program Manager Saudi Arabian National Guard (PM, SANG) Modernization Program was to update the Saudi Arabian National Guard in the areas of management, organization, training, equipment, maintenance, supply, procurement, medical care, and facilities commensurate with the standards of the U.S. Army and other accrediting U.S. professional organizations, as appropriately suited to the capabilities of the SANG. The PM exercised principal authority over the planning, direction, execution, and control of the modernization which covered all elements, missions, functions, and requirements of the SANG. This facilitated increased SANG participation in all aspects of the program. The goal was SANG's eventual capability to unilaterally initiate and sustain modern organizations and systems.⁴

Personnel and Manpower

Brigadier General Waldo D. Freeman, Jr., had served as PM-SANG since August 1988. Although the commander did not change, there was a change in authorized spaces for FY89. Due to an increase in the AMC Manpower Program Budget Guidance, 30 September 1988, fifty additional authorizations were received by Office of the Program Manager, Saudi Arabian National Guard (OPM-SANG) and were distributed against existing Table of Distribution and Allowances requirements as of 1 October 1988. The following table shows the authorized and assigned strength on 1 October 1988 and 30 September 1989:

	OFFICER	ENLISTED	GS CIV	TSN*	TOTAL
Authorized:	40	5	99	23	167
Assigned: (1 Oct 88)	36	5	96	29	166
Assigned: (30 Sep 89)	38	5	106	31	180

*TSN: Third State National

Organization

Significant structural changes were instituted during the fiscal year. The Training, Operations, and Logistics Division was reorganized into two divisions: the Training and Operations Division and the Logistics and Force Development Division. This action reflected an expansion of program breadth and contributed to more effective leadership of the operational staff. The Training and Schools Branch was also reorganized into two branches: Operations Branch and Schools Branch. The Chief of Staff position

⁴PM, SANG FY89 Historical Submission. Hereafter, information in this section is from this source unless otherwise noted.

was established to replace the Long Range Planning position. This action was designed both to strengthen OPM-SANG's internal management/administrative process and to more effectively utilize an O-6 position. This action allowed for a more organized and effective span of control over the related functions. In addition, military occupational specialty changes were documented and approved to better reflect the evolving mission of OPM-SANG.

Program Manager Charter

On 12 January 1989, BG Freeman, Jr., was officially chartered by Secretary of the Army Marsh as the ninth program manager. This process, previously routine, had encountered resistance within the Army staff since the recently established Program Executive Officer (PEO) structure did not provide for secretarial chartering of PMs. In recognition of the international sensitivity associated with this issue, the CG, AMC directly intervened with the Secretary and secured the rechartering.⁵ Although this issue was specifically limited to PM SANG and the prestige that being chartered by the Secretary of the Army would give the PM SANG organization in Saudi Arabian eyes, it was anticipated that this issue would also arise for other PM programs that did not fall within the PEO (Program Executive Office) structure.⁶

Foreign Military Sales

Crossleveling of Modernization Program Deposits. About \$21 million deposited by the SANG for Modernization Program activities was used to liquidate an unrelated SANG indebtedness to the U.S. Army Corps of Engineers. This action was taken without prior notice to OPM-SANG or HQ SANG. At the behest of the CG, AMC, the Defense Security Assistance Agency (DSAA) and the Corps of Engineers reopened this matter in an attempt to pursue collection actions through the State Department.⁷ At the end of the fiscal year, however, the PM reported that

Despite over nine months of messages and assurances, active collection efforts have not been initiated to resolve this Corps of Engineers collection problem. Until this is accomplished, approximately \$21 million advanced by SANG for this Modernization Program may be permanently diverted to liquidate this unrelated SANG indebtedness.⁸

Reduction of Administrative Surcharge. In 1983, DSAA's policy of assessing an administrative surcharge on FMS (Foreign Military Sales) case "management" lines was determined to be inappropriate and such charges were discontinued. Essentially the charge constituted "overhead on overhead." The SANG Modernization Program has multiple cases and should have benefited from this change. However, instead of having a management line on each of the several related cases, "management" activities are provided for in a separate "sub-case" under the "master case." While DSAA immediately implemented the new policy on "management lines," relief was denied the SANG management sub-case. After prolonged review, DSAA agreed in 1989 to reverse its position and grant relief from the administrative fee on "management" expenses

⁵PM Charter, SANG Modernization Program, 12 Jan 89; Memorandum, COL John R. Bramlett to Commander, 29 Sep 88, subj: Summary Sheet - Revised Charter for the PM SANG Modernization Program.

⁶Memorandum from Chief, Office of Project Management to Commander, AMC, SUBJECT: SUMMARY SHEET - Revised Charter for the Program Manager (PM) Saudi Arabian National Guard (SANG) Modernization Program, 29 Sept 1988.

⁷Point Paper, 24 Oct 88, subj: Cross Leveling of Modernization FMS Deposits.

⁸Program Manager's Quarterly Report (1 July 1989 - 30 September 1989).

associated with the Modernization Program. While the policy change would not be retroactive, it would reduce current program (through 31 December 1990) administrative fees by approximately \$160,000.

Modification of "Letter of Offer and Acceptance," DD Form 1513. Over the years, SANG officials had raised several objections to the FMS process and the current version of the implementing form, DD Form 1513. SANG asserted that the FMS process was one-sided and that no real negotiation occurred; the forms and procedures were inflexible; and despite paying full cost, they were treated no better than "grant aid" customers. In response, DSAA was asked to provide some accommodation on items that were subject only to administrative determination. Recommended changes included an optional DD Form 1513, restructured into a version applicable to "services" type cases, and a DSAA agreement to execute the form in English and Arabic. These changes would have little impact on DSAA operations, but would be accepted by the Saudis as substantial evidence that their sovereignty was recognized and that they were a valued FMS customer. By the end of the fiscal year, the response from DSAA on these issues had been negative and in response USASAC and the Central Command had joined in asking DSAA for a positive response.

Program Manager's Master Plan (PMMP)

From a programmatic standpoint the most significant FY89 event was the development and publication of a totally revised PMMP. This was the single integrated document that guided OPM in its recommendations for modernization efforts within SANG. The plan assessed current weaknesses within SANG and identified 65 near and mid- to long-term projects to correct those weaknesses. The PMMP was a "living document" updated to reflect accomplishments and changes in technology, manpower, doctrine and/or mission. It was designed to ensure that OPM-SANG advice and assistance was consistent over time and did not fluctuate with changes in personnel and program managers.

A number of major initiatives were developed and recommended to SANG during FY89. A recommendation to acquire new combat vehicles was under consideration at the highest levels of the Saudi Arabian Government. This action had been in various stages of development since the mid-1980s and had been delayed primarily because of financial constraints.

The recommendation to expand the modernization effort into the Weapons and Ammunition Directorate had received limited acceptance and implementation. An OPM adviser was assisting SANG in this area. The recommendation to train light infantry brigade staffs had also received limited acceptance. Three full-time and several part-time advisers were providing assistance in the outer provinces where those brigades were located. The U.S. role in the provinces continued to grow.

A proposal to upgrade SANG artillery by having it consist entirely of 155mm howitzers instead of the current mixture of 105mm and 155mm howitzers was under active consideration by SANG. So too was a proposal on chemical defense capabilities.

Training Initiatives

Command Field Exercise (CFX). In March 1989, for the first time in the sixteen-year history of the Modernization Program, the HQ SANG's battle staff participated in a field exercise which required operation under twenty-four hour conditions in a challenging, realistic scenario that the participants did not know in advance. The battle staff and subordinate units down to the level of company headquarters maneuvered in response to an OPM-SANG/contractor operated control headquarters. The exercise was considered highly successful by all participants and was invaluable in identifying goals and objectives for the conduct of the battle staff's collective training.

Headquarters Modernization. During FY89, the Modernization Program expanded to encompass SANG Headquarters. This represented a major advance in the modernization process which, until FY89,

had concentrated on the SANG units. Collective training of the SANG Headquarters staff began in the fourth quarter with formal classes on mission, organization, and staff coordination. Ultimately, this initiative would develop the capability within SANG for overall command and control of its fighting forces.

Provincial Training Initiative. The SANG Provincial Commanders of the Eastern and Western provinces, in separate meetings with the program manager, sought expansion of the Modernization Program into their commands. During FY89, a permanently stationed adviser, a major, was posted in each province. Advisory efforts were augmented both by TDY support and by mobile contractor teams. These efforts were designed to lay the basis for expanded training and to identify contractor support requirements. If approved and funded by HQ SANG, this initiative would represent a major increase in program breadth.

Field Medical Training Program. Saudi Arabian National Guard support for the establishment of this vital but long delayed program was obtained during FY89 with a sound decision to integrate field medical training into the existing SANG school. All necessary planning, recruitment, facilities, and course development was accomplished so as to permit commencement of instruction in the first quarter of FY90.

U.S. ARMY SECURITY AFFAIRS COMMAND ROSTER OF KEY PERSONNEL, FY89

Commanding General	MG Thomas G. Lightner
Deputy	Paul Donovan
Chief of Staff	COL W. W. Winslow, from 17 Jan 89
Command Administrative Office	Donald Uber, from 5 Nov 89
Resource Management Directorate	Charles Kuderna
Deputy, Resource Manager	Connie Murtomaki
Security Affairs Resources Division	Gerald O'Donnell
Financial Plans and Policy Division	Robert Gilman
Productivity and Management Division	Jack Anderson, from 23 Apr 19
Finance and Accounting Division	Raymond Daws
Asia/Pacific/Americas Directorate	COL Frederick Meyers, from 15 Jun 89
Pacific Division	Elsie Hickman
Asia Division	Philip Roman
Latin America Division	LTC Harry Truman
Europe Directorate	COL William Parks
Regional Division A	Richard Sweeney
Regional Division B	Don Wright
Regional Division C	Ms. Steven Jones
Mideast/Africa Directorate	COL Robert Goodwin
Mideast/Africa Division	Hans Scharig
Arabian Peninsula Division	LTC William Morgan, from 19 Apr 89
North Africa Division	LTC Richard Luckenbill
Office for International Industrial Cooperation	Doug Leach

Policy, Plans and Operational Support Directorate Plans and Operational Support Division Policy and Procedures Division	Raymond L. Lum John Carson James Thomas
Deputy for Operations	COL William C. Brown
Assistant Deputy	James Rutherford
Europe/Africa Directorate Europe Division Africa Division	Charles Odell Joan Buchanan Russell Neydl, from 13 Aug 89
Asia/Pacific/Mideast/Americas Directorate Asia/Pacific Division Mideast/Americas Division	Victor Stasney Jack Heibert James Johnson
Product Assurance Directorate	Gerry Grimes, from 29 Jan 89
Logistics Support Directorate Cooperative Logistics Division Logistics System Support Division	Daniel Zydorczyk Ronald Rautzahn Richard Alpaugh
Information Management Directorate Technical Support Division Systems Integration Division Case Financial Mgmt Appl. Development Div. Logistics Application Dev. Division Computer Management Division USASAC-Alex Application Dev. Division	Robert Singer Clarke Hilburn, from 15 Feb 89 Christian Decker, from 23 Oct 88 Spencer Anderson Melvin Nelson Michael Dunkle Garnetta Rizzo
SA3 PMO	Duane Murtomaki
Public Affairs Office	Vacant, from 27 Jan 89
PM, Saudi Arabian National Guard PM, SANG Washington Field Office	MG Waldo Freeman LTC Harry Rollins, from 17 Jul 89

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Acronym Glossary

AAA	Army Audit Agency	AFN	Armed Forces Network
AAAP	Alabama Army Ammunition Plant	AFSC	Air Force Systems Command
AAC	Army Acquisition Corps	AFV	Armored Family of Vehicles
AAD-C3	Area Air Defense-Command and Control	AFV	Army Family of Vehicles
AAE	Army Acquisition Executive	AGARD	Advisory Group for Aerospace Research and Development
AAFES	Army and Air Force Exchange Service	AGR	Active Guard and Reserve
AAMIS	AMC Automated Manpower Management Information System	AGS	Armored Gun System
AAN	Audit Alert Network	AHP	Army Helicopter Improvement Program
AAO	Authorized Acquisition Objective	AI/ES	Artificial Intelligence/Expert Systems
AAP	Army Ammunition Plant	AI	Artificial Intelligence
AARS	Advanced Airborne Radiac System	AIA	U.S. Army Intelligence Agency
AAWS/AMS	Advanced Antitank Weapon System/Advanced Missile System	AIEP	Army Ideas for Excellence Program
AAWS-M	Advanced Anti-Tank Weapon System-Medium	AIF	Army Industrial Fund
ABCA	American-British-Canadian-Australian	AIG	Address Indicator Group
ACADA	Automatic Chemical Agent Alarm	AIHQ	Ammunition Initial Issue Quantity
ACC	Army Commanders' Conference	AILSEC	Army ILS Executive Committee
ACCOR	Army Central COMSEC Office of Record	AIM	Acquisition Information Management
ACDA	Arms Control and Disarmament Agency	AIMS	Army Inventory Management System
ACOE	Army Communities of Excellence	AIR	Acquisition Improvement Reviews
ACP	Assault Command Post	ALMC	Army Logistics Management College
ACPC	Arroyo Center Policy Committee	ALMC	Army Logistics Management Center
ACPERS	Army Civilian Personnel System	ALOC	Air Line of Communication
ACPM	Aircrew Protective Mask	ALT	Acquisition Lead Time
ACRC	Area Calibration Repair Center	AMARC	Army Materiel Acquisition Review Committee
ACTEDS	Army Civilian Training, Education, and Development System	AMC-MOPES	AMC Mobilization and Operations Planning and Execution System
ACTS	Air Combat Training Systems	AMCCC	AMC Commanders Conference
ADAP	Army Designated Acquisition Program	AMCCOM	U.S. Army Armament, Munitions and Chemical Command
ADAPCP	Alcohol and Drug Abuse Prevention and Control Program	AMCLOG 21	Army Materiel Command Logistics 21
ADATS	Air Defense System	AMCMEA	AMC Management Engineering Activity
ADCS	Assistant Deputy Chief of Staff	AMCOS	Army Manpower Cost System
ADDS	Army DEIS Data Entry System	AMCP	Ammunition Management Career Program
ADICP	Assistant Deputy for International Cooperative Programs	AMCPO	Ammunition Management Career Program Office
ADM	Acquisition Decision Memorandum	AMC	U.S. Army Materiel Command
ADMURU	Aviation Depot Maintenance Roundout Unit	AMDF	Army Master Data File
ADP	Automated Data Processing	AMEC	Army Management Engineering College
ADPE	Automated Data Processing Equipment	AMEDD	Army Medical Department
ADRDA	Assistant Deputy for Research, Development and Acquisition	AMHA	Army Management Headquarters Activity
ADSW	Active Duty for Special Work	AMMS	Acquisition Milestone Management System
AEC	Air Eligibility Codes	AMR	Army Management Review
AEC	Army Education Centers	AMSA	Army Management Support Activity
AEP	Allied Engineering Publications	AMSAA	U.S. Army Materiel Systems Analysis Activity
AERP	Army Environmental Requirement Report	AMS	Army Management Structure
AFATDS	Advanced Field Artillery Tactical Data System	AMSAS	Army Manpower Standards Application System
AFES	Automated Financial Entitlements System	AMSC	Army Management Staff College
AFH	Army Family Housing	AMSS	Army Materiel Status System
AFLC	U.S. Air Force Logistics Command	AMTAS	Army Modernization Training Automation System
		ANAD	Anniston Army Depot
		ANL	Argonne National Laboratory

ANZUS	Australia/New Zealand/United States	BCE	Baseline Cost Estimates
AOAP	Army Oil Analysis Program	BCM	Business Clearance Memorandum
AOD MOD	Area Oriented Depots Modernization	BCN	Broadband Cable Network
AOD	Area Oriented Depot	BCW	Binary Chemical Warhead
AOW	Action Officers Workshop	BDAR	Battle Damage Assessment and Repair
APAC	Army Procurement Automation Council	BDP	Battlefield Development Plan
APBMP	Ammunition Production Base Master Plan	BDS	Bulk Drain Station
APC	Armored Personnel Carrier	BES	Budget Estimate Submission
APG	Aberdeen Proving Ground	BFVS	Bradley Fighting Vehicle System
APGM	Autonomous Precision Guided Munition	BHMS	Battalion Heavy Mortar System
APRO	Army Procurement Research Office	BMAR	Backlog of Maintenance and Repair
APSL	Army Primary Standards Laboratory	BOM	Bill of Materiel
APU	Auxiliary Power Unit	BPRR	Budget and Program Review
AR	Army Regulation	BRAC	Base Realignment and Closure
ARDEC	U.S. Army Armament Research and Development Center	BR	Branch
ARENBO	U.S. Army Armor Engineer Board	BRDEC	Belvoir Research, Development and Engineering Center
ARI	Automatic Return Item	BRIMS	Budget Resource Information Management System
ARNG	Army National Guard	BRL	Ballistics Research Laboratory
ARPRO	Army Plant Representative Office	BRRWP	Battlefield Recovery and Repair Working Party
ARR	Annual Recurring Requirements	BZ	Benzene
ARRS	Army Readiness Reporting System	C/SCSC	Cost/Schedule Control Systems Criteria
ARTS	Approval and Resource Tracking System	C3	Command, Control and Communications
ASAP	Army Streamlined Acquisition Process	C3I	Command, Control, Communications and Intelligence
ASA(FM)	Assistant Secretary of the Army (Financial Management)	CA	Commercial Activities
ASA(I&L)	Assistant Secretary of the Army (Installations and Logistics)	CAA	Clean Air Act
ASA(RDA)	Assistant Secretary of the Army (Research, Development and Acquisition)	CAASO	Centralized Army Aviation Scheduling Office
ASARC	Army Systems Acquisition Review Council	CAC	U.S. Army Combined Arms Center
ASAS	All Sources Analysis System	CACDA	Combat Arms Concepts Development Agency
ASB	Army Science Board	CAD	Computer Aided Design
ASCC	Air Standardization Coordinating Committee	CADM	Cost Analysis for Decision Making
ASF	Army Stock Fund	CADNET	Chemical Agent Detector Network
ASL	Authorized Stockage Lists	CAIG	Cost Analysis Improvement Group
ASP	Army Suggestion Program	CALMIS	Calibration Management Information System
ASWG	Automation Security Working Group	CALS	Committee For Ammunition Logistics Support
ATACMS	Army Tactical Missile System	CALS	Computer-Aided Acquisition and Logistic Support
ATAR	Advanced Technology Assessment Report	CAM	Chemical Agent Monitor
ATC	Acquisition Tracking Center	CAMDS	Chemical Agent Munitions Disposal System
ATCCS	Army Tactical Command and Control System	CAO	Contract Administration Office
ATE	Automatic Test Equipment	CAPE	Customer Acquisition Plan Entry
ATQMC	Army Total Quality Management Committee	CAPS	Communication Aural Protective System
ATRRS	Army Training Requirements and Resource System	CARC	Chemical Agent Resistant Coating
ATS	Acquisition Tracking System	CARRS	Cost Analysis Resource Reference System
ATSC	Area TMDE Support Centers	CAS	Contract Administration Services
AUSA	Association of the United States Army	CAS	Control Actuator System
AVCRAD	Aviation Classification and Repair Activity Depot	CASS	Contract Advisory and Assistance Services
AVIM	Aviation Intermediate Maintenance	CATC	Combined Army Training Center
AVSCOM	U.S. Army Aviation Systems Command	CAWCF	Conventional Ammunition Working Capital Fund
BAST	Board for Army Science and Technology	CBMS	Chemical Biological Mass Spectrometer
BBP	Break Bulk Point	CBRS	Concept-Based Requirements System
BBS	Bulletin Board System	CBS-X	Continuing Balance System-Expanded
		CCAD	Corpus Christi Army Depot

CCI	Controlled Cryptographic Item	CRCP	Civilian Resource Conservation Program
CCI	Controlled COMSEC Item	CRDEC	Chemical Research Development and Engineering Center
CCP	Consolidation and Containerization Point	CRISP	Computer Reconstructed Images from Scene Photographs
CCSS	Commodity Command Standard System	CRMP	Computer Resources Management Plans
CDA	Catalog Data Activity	CRP	Consolidation Receipt Point
CDS	Congressional Descriptive Summaries	CRSA	Contractors Requiring Special Attention
CDTF	Central Demilitarization Training Facility	CSA	Chief of Staff of the Army
CEAC	U.S. Army Cost and Economic Analysis Center	CSDP	Chemical Stockpile Disposal Program
CECDC	Cost Estimate Control Data Center	CSI	Chemical Surety Inspection
CECOM	U.S. Army Communications-Electronics Command	CSI	Critical Safety Items
CEGE	Combat Equipment Group, Europe	CSIP	Critical Safety Item Program
CEL	Civilian Employment Level	CSLA	U.S. Army Communications Security Logistics Activity
CEM	Combined Effects Munitions	CSM	Command Sergeant Major
CEP	Concept Evaluation Plan	CSSCS	Combat Service Support Control System
CERL	Construction Engineering Research Laboratory	CSSM	Conference Site Selection Model
CESMR	Command Equipment Supply Management Reviews	CSTA	U.S. Army Combat Systems Test Activity
CEV	Combat Engineer Vehicle	CTA	Central Test Activity
CFT	Captive Flight Test	CTC	Combat Training Center
CFX	Command Field Exercise	CUCV	Commercial Utility Cargo Vehicle
CHR	Command Health Report	CUIL	Common User Item List
CHS	Common Hardware/Software	CUS	Coherent Unit Set
CIA	Central Intelligence Agency	CVDOS	Combat-Vehicle-Defensive Obscuration System
CIM	Computer Integrated Manufacturing	CW	Chemical Warfare
CIP	Command Inspection Program	CW	Chemical Weapons
CIPMS	Civilian Intelligence Personnel Management System	CWTV	Chemical Weapons Treaty Verification
CIS	Contractor Information System	DA	Department of the Army
CIT	Consumable Item Transfer	DA-IPR	Department of the Army In-Process Review
CITV	Commander's Independent Thermal Viewer	DAB	Defense Acquisition Board
CLIF	Controlled Item Logic File	DAES	Defense Acquisition Executive Summary
CLS	Contractor Logistics Support	DAIG	Department of the Army Inspector General
CMCS	COMSEC Materiel Control System	DAR	Defense Acquisition Regulation
CMR	Contract Management Reviews	DARPA	Defense Advanced Research Projects Agency
CMS	Combat Mission Simulators	DATP	Detroit Arsenal Tank Plant
COB	Command Operating Budget	DCA	Defense Communications Agency
COCP	Customer Order Control Points	DCAA	Defense Contract Audit Agency
COE	Center of Excellence	DCAS	Defense Contract Administration Services
COEA	Cost and Operational Effectiveness Analysis	DCGICP	Deputy Commanding General for International Cooperative Programs
COIC	Critical Operational Issues and Criteria	DCGMR	Deputy Commanding General for Materiel Readiness
COMSEC	Communications Security	DCGRDA	Deputy Commanding General for Research, Development and Acquisition
COR	Contracting Officer Representative	DCS	Deputy Chief of Staff
COSIS	Care of Supplies in Storage	DCSA	DCS for Ammunition
CP 33	Civilian Career Program 33	DCSLOG	Deputy Chief of Staff for Logistics
CP ²	Contractor Performance Certification Program	DCSOPS	Deputy Chief of Staff for Operations
CPC	Civilian Pay Ceiling	DCSRDA	Deputy Chief of Staff for Research, Development and Acquisition
CPC	Corrosion Prevention and Control	DCSTC	U.S. Army Digital Communications System Test Company
CPCC	Civilian Pay Ceiling Committee	DCSTPM	DCS for Technology Planning and Management
CPD	Civilian Personnel Division	DCTN	Defense Commercial Telecommunications Network
CPE	Collective Protection Equipment		
CPO	Civilian Personnel Office		
CPR	Cost Performance Reports		
CPSR	Contractor Purchasing System Review		
CPTOA	Conserved Peacetime Obligational Authority		
CRC	Common Reference Code		

DCTN	Digital Communications Terminals Network	DTIC	Defense Technical Information Center
DDEP	Defense Data Exchange Program	DTTS	Defense Transportation Tracking System
DDN	Defense Data Network	DWS	Distributed Wargaming System
DDSP	Defense Development Sharing Program	E&S	Engineers and Scientists
DEA	Data Exchange Agreement	E3	Electromagnetic Environmental Effects
DEA	Data Exchange Annex	EA	Economic Analysis
DEDCNM	Deputy Executive Director for Chemical and Nuclear Matters	EA	Environmental Assessment
DEIS	Defense Energy Information System	ECR	Environmental Compliance Review
DEMIL	Demilitarization	ECU	Environmental Control Unit
DERA	Defense Environmental Restoration Account	EDCA	Executive Director for Conventional Ammunition
DESCOM	U.S. Army Depot System Command	EDG	Executive Development Group
DES	Data Encryption Standard	EDI	Electronic Data Interchange
DETS	Delivery Execution Tracking System	EDT	Engineering Design Test
DFD	Design for Discard	EEO	Equal Employment Opportunity
DGSC	Defense General Supply Center	EEOO	Equal Employment Opportunity Officer
DHHS	Department of Health and Human Services	EHSH	U.S. Army Engineering and Housing Support Center
DIA	Defense Intelligence Agency	EIA	End Item Application
DIAP	Design Influence Action Plan	EIC	Environmental Information Center
DID	Data Item Description	EIS	Environmental Impact Statement
DIFS	Defense Integrated Financial System	ELC	European Logistics Conference
DIIP	Defense Inactive Item Program	EMC	Environmental Management Committee
DISC4	Director of Information Systems for Command, Control, Communications, and Computers	EMI	Electromagnetic Interference
DLA	Defense Logistics Agency	EMP	Electromagnetic Pulse
DLISIE	Defense Logistics Studies Information Exchange	EOC	Emergency Operations Center
DMR	Defense Management Review	EO	Equal Opportunity
DNA	Defense Nuclear Agency	EPA	Extended Planning Annex
DODAAC	DOD Activity Address Codes	EPA	U.S. Environmental Protection Agency
DODAAF	DOD Activity Address File	EPG	Electronic Proving Ground
DODCEL	DOD Consolidated Electronic Test Equipment Listing	EPG	Engineer Proving Grounds
DODIG	Defense Inspector General	EPLARS	Enhanced Position Locating Reporting System
DODSASP	DOD Small Arms Serialization Program	EQD	Environmental Quality Division
DOE	Department of Energy	ER	Efficiency Review
DOIM	Director of Information Management	ERF	European Redistribution Facilities
DPE	Demilitarization Protective Ensemble	ERP	Environmental Restoration Program
DPEP	Defense Professional Exchange Program	ERPB	Emergency Response Planning Board
DPG	Dugway Proving Ground	ES	Expert Systems
DPP	Development Production Proveout	ESII	Expanded Self Help
DRG	Defense Research Group	ETG	Environmental Technologies Group
DRIS	Defense Regional Interservice Support	EUC	End-user Certificates
DS4	Direct Support Unit Standard Supply System	EUCOM	European Command
DSAA	Defense Security Assistance Agency	EUE	Extended User Evaluation
DSACS	Defense Standard Ammunition Computer System	EXCAP	Exercise Capability
DSAFE	DESCOM Support Activity Far East	F&A	Finance and Accounting
DSARC	Defense System Acquisition Review Council	FA	Functional Areas
DSB	Defense Science Board	FAADS	Forward Area Air Defense System
DSE	Decision Support Experimentor	FAADS LOS-F-H	Forward Area Air Defense System Line-of-Sight-Heavy
DSMA	Decision Support Management Agency	FAADS NLOS	Forward Area Air Defense System Non-Line-of-Sight
DSREDS	Digital Storage and Retrieval of Engineering Data System	FAP	Family Advocacy Program
DSS	Decision Support System	FAR	Federal Acquisition Regulations
DSS	Devices, Simulators and Simulations	FAST	Field Assistance in Science and Technology
DSSP	Defense Standards and Specifications	FCG	Functional Coordinating Group
DTC	Design to Cost	FCMS	Financial Case Management System
		FCR	Functional Chief Representative
		FCS	Federal Cataloging System
		FDT&E	Force Development & Experimentation
		FEAP	Facilities Engineer Apprentice Program
		FECA	Federal Employees Compensation Act
		FEMA	Federal Emergency Management Agency

FERR	Final Efficiency Review Report	HOMES	Housing Operation Management System
FES	Factor Evaluation System	HOMS	HELLFIRE Optimized Missile System
FFB	Folding Float Bridge	HQ AMC	Headquarters, U.S. Army Materiel Command
FFCA	Federal Facility Compliance Agreement	HQDA	Headquarters, Department of the Army
FFP	Frequent Flyer Program	HRG	Housing Report Generator
FIA	Financial Inventory Accounting	HSC	Health Services Command
FLIR	Fire Control/Guidance System	HTRTS-M	High Tech Regional Training Sites-Maintenance
FLIRS	Forward Looking Infrared Sensors	HVM	Hypervelocity Missile
FLRRDAP	Field Long Range Research, Development and Acquisition Plan	HW	Hazardous Waste
FM	Functional Model	HWDMs	Hazardous Waste Data Base
FMF	Frequency Management Facility	I/FE	Installation/Field Elements
FMP	Foreign Materiel Program	I-CAM	Improved Chemical Agent Monitor
FMS	Foreign Military Sales	I&SA	Installations and Services Activity
FMTV	Family of Medium Tactical Vehicles	IACOP	International Armaments Cooperative Opportunities Plan
FNSI	Finding of No Significant Impact	IAG	Interagency Agreement
FOG-M	Fiber Optic Guided Missile	IAR	Independent Assessment Report
FORSCOM	Forces Command	ICAMP	Integrated Conventional Ammunition Maintenance Plan
FOTL	Follow-On To LANCE	ICAO	International Civil Aviation Organization
FPO	Field Placement Offices	ICAPP	Integrated Conventional Ammunition Procurement Plan
FPPWR	Forward-Positioned Prepositioned War Reserves	ICE	Inventory Control Effectiveness
FRG	Federal Republic of Germany	ICUZ	Installation Compatible Use Zone
FSC	Federal Supply Class	ICWS	Commander's Improved Weapon Station
FSCDWS	Fixed Site Chemical Detection and Warning System	IDHFN	Indirect Hire Foreign Nationals
FSD	Full-Scale Development	IDSS	Interoperability Decision Support System
FSR	Fielded System Reviews	IED	Individual Equipment Decontamination
FSTC	Foreign Science and Technology Center	IEMIS	Integrated Emergency Management Information System
FTMA	Future Tank Main Armament	IEP	Independent Evaluation Plan
FUED	First Unit Equipped Date	IEW	Intelligence Electronic Warfare
FWAD	Fort Wingate Army Depot	IFF	Identification Friend or Foe
FWE	Foreign Weapons Evaluation	IFS-M	Integrated Facilities System-Micro/Minicomputer
FYDP	Five Year Defense Plan	IFTE	Intermediate Forward Test Equipment
GAO	General Accounting Office	IG	Inspector General
GD	General Dynamics	IGNET	Inspector General Network
GMLR	Guided Missile and Large Rocket Report	ILS	Integrated Logistics Support
GMPA	General Materiel and Petroleum Activity	ILSLRMP	Integrated Logistic Support Long Range Master Plan
GO RCPC	General Officer Reserve Components Policy Council	ILSMT	ILS Management Team
GO/SES	General Officer/Senior Executive Service	ILSP	Integrated Logistics Support Plan
GO	General Officer	IMA	Individual Mobilization Augmentee
GOJ	Government of Japan	IMA	Information Mission Area
GOP	Government of Pakistan	IME	International Materiel Evaluation
GOSC	General Officer Steering Committee	IMO	Information Management Officer
GPS	Global Positioning System	IMO	International Maritime Organization
GS	General Schedule	IMP	Information Management Plan
GSA	General Services Administration	IMSC	Information Management Support Council
GW	Groundwater	IMSRC	Information Management Systems Review Committee
HAZMIN	Hazardous Waste Minimization	INF	Intermediate-Range Nuclear Forces
HBCUs/MIs	Historical Black Colleges and Universities and Minority Institutions	INSCOM	U.S. Army Intelligence and Security Command
HC	Hexachlorethane	IOE	Initial Operational Evaluation
HCA	Head of Contracting Agency	IOTE	Initial Operational Test Evaluation
HDL	Harry Diamond Laboratories	IPDS	Inland Petroleum Distribution System
HEP	Hispanic Employment Program	IP	Implementation Plan
HIFM	Heavy Force Modernization	IPF	Initial Production Facility
HIIA	Health Hazard Assessment		
HIP	Howitzer Improvement Program		
HISA	Headquarters, Installation Support Activity		
HIMMWV	High Mobility Multipurpose Wheeled Vehicles		

IPO	International Program Office	LCA	Logistics Control Activity
IPOC	International Points of Contact	LCSE	Life Cycle Software Engineering
IPR	In-Process Review	LCSEC	Life Cycle Software Engineering Center
IPR	Intelligence Production Requirement	LCSS	Life Cycle Software Support
IPS	Integrated Procurement System	LEA	Logistics Evaluation Agency
IPT	Initial Production Test	LEAD	Letterkenny Army Depot
IR&D/B&P	Independent Research and Development/Bid and Proposal	LHAAP	Longhorne Ammunition Army Plant
IR&D	Independent Research and Development	LHI	Lease Hold Improvements
IRAC	Internal Review and Audit Compliance	LHX	Light Helicopter Experimental
IRV	Improved Recovery Vehicle	LIDAR	Laser Induced Detection and Ranging
ISA	Inter/Intraservice Support Agreement	LIF	Logistics Intelligence File
ISA	International Security Affairs	LL	Lessons Learned
ISA	International Standardization Agreement	LOA	Letter of Acceptance
ISC	U.S. Army Information Systems Command	Log R&D	Logistics Research and Development
ISEC	Information Systems Engineering Command	LOGAMP	Logistics and Acquisition Management Program
ISSA	Intraservice Support Agreement	LOGC	Logistics Center
IST	Institute for Simulation and Training	LOGCAP	Logistics Civil Augmentation Program
ITAC	U.S. Army Intelligence Threat Analysis Center	LOGCEN	Logistics Center
ITI	Innovative Technology Inc.	LOGMARS	Logistics Applications Of Marking And Reading Symbols
ITS	Image Transmission System	LOGPARS	Logistics Planning and Requirements Simplification System
ITS	Integrated Training System	LOGPLAN	Logistics Plan
J&A	Justification and Approval	LOI	List of Items
JACADS	Johnston Atoll Chemical Agent Disposal System	LOS-F-H	Line of Sight-Forward-Heavy
JAST	Japan Armaments Study Team	LOS-R	Line of Sight-Rear
JCS	Joint Chiefs of Staff	LOSAT	Line of Sight Anti-Tank
JLC	Joint Logistics Commanders	LPC	Launch Pod Container
JLC-CRM	Joint Logistics Commanders Computer Resource Management	LPU	Limited Procurement Urgent
JMENS	Joint Mission Element Need Statement	LRIP	Low Rate Initial Production
JOAP-TSC	Joint Oil Analysis Technical Support Center	LRRDAP	Long Range Research, Development and Acquisition Plan
JOCG	Joint Ordnance Commanders Group	LRRDAP/MAMP	Long Range Research Development and Acquisition Plan/Mission Area Materiel Plan
JPCG	Joint Packaging Coordinating Group	LSA	Logistics Support Analysis
JPCG-CRM	Joint Policy Coordinating Group on Computer Resource Management	LSAR	Logistics Support Analysis Record
JPG	Jefferson Proving Ground	LSPR	Logistic System Program Review
JTFP	Joint Tactical Fusion Program	LSI	Limited Scope Surety Inspections
JTMD	Joint Tactical Missile Defense	LULAC	League of United Latin American Citizens
JUSMAG	Joint U.S. Military Advisory Group	M&S	Methods and Standards
JUSMAGK	Joint U.S. Military Advisory Group, Korea	MAA	Mission Area Analysis
JWG	Joint Working Group	MACE	Mobilization AVCRAD Control Element
KE	Kinetic Energy	MACOM	Major Command
KEG	Knowledge Engineering Group	MACS	Multipurpose Arcade Combat Simulator
KEM	Kinetic Energy Missile	MADAM	Materiel Development Automated Milestone System
LAAP	Louisiana Army Ammunition Plant	MAISRC	Major Information Systems Review Committee
LABCOM	U.S. Army Laboratory Command	MAIT	Mission Area Integration Team
LAMPSS	Large Area Mobile Projected Smoke System	MAM	Materiel Acquisition Management
LAN	Local Area Network	MAM	Mission Area Manager
LAO	Logistics Assistance Offices	MANPRINT	Manpower and Personnel Integration
LAPA	Logistics Assistance Program Activity	MAP	Military Assistance Program
LAPES	Low Altitude Parachute Extraction System	MARB	Materiel Acquisition Review Board
LAPS	Light-Addressable Potentiometric Sensor	MARKS	Modern Army Recordkeeping System
LAR	Logistics Assistance Representatives	MARVS	Materiel Acquisition and Requirements Validation System
LAV	Light Armored Vehicle	MATDEV	Materiel Developer
LBAD	Lexington Bluegrass Army Depot	MAX	Maximum Army Expansion Model
LBTS	Large Blast/Thermal Simulator	MCA	Major Construction, Army

MCAA	Master Calendar of Acquisition Activities	MSE	Mobile Subscriber Equipment
MCB	Manage the Civilian Work Force to Budget	MSEL	Master Scenario Events List
MCCR	Mission Critical Computer Resources	MSG	Multisalvo Smoke Grenade Launcher
MCD	Materiel Change Documentation	MSIC	Missile and Space Intelligence Center
MCIS	Materiel Change Information System	MTL	Materials Technology Laboratory
MCM	Materiel Change Management	MWO	Modification Work Order
MCS	Maneuver Control System	MWR	Morale, Welfare, and Recreation
MCTL	Militarily Critical Technologies List	MZAD	Mainz Army Depot
MDAP	Major Defense Acquisition Program	NAEDS	Nonaqueous Equipment
MDEP	Management Decision Package	NAF	Decontaminating System
MDM	Multipurpose Demilitarization Machine	NAMRAD	Non-Appropriated Fund
MDS	Modular Decontamination System	NAMSA	Non-Atomic Military Research and Development
MEA	Management Engineering Activity	NASS	NATO Maintenance and Supply Agency
MEA	Mobilization/Emergency Actions	NATO	National Association of Suggestion Systems
MEDCEN	Medical Center	NAVAIR	North Atlantic Treaty Organization
MEDDAC	Medical Department Activity	NBCRS	U.S. Naval Air Command
MENS	Mission Element Needs Statement	NC	Nuclear, Biological and Chemical Reconnaissance System
MEO	Most Efficient Organization	NDI	Non-Construction
MI	Market Investigation	NET	Non-Developmental Item
MICAD	Multi-Purpose Integrated Chemical Agent Alarm	NETP	New Equipment Training
MICOM	U.S. Army Missile Command	NETSIM	New Equipment Training Plans
MIDP	Missile Distribution Plan	NETT	Network Simulation
MIDS	Materiel Integrating Data System	NETT	New Equipment and Technology Training
MILES	Multiple Integrated Laser Engagement System	NETT	National Federation of Federal Employees
MILSTAMP	Military Standard Transportation and Movement Procedures	NIB	National Industries for the Blind
MILSTRIP	Military Standard Requisitioning and Issue Procedures	NICP	National Inventory Control Point
MIP	Model Installation Program	NIPR	Non-Recurring Intelligence Production Requirement
MIPR	Military Interdepartmental Purchase Request	NISH	National Industries for the Severely Handicapped
MITLA	Microcircuit Technology in Logistics Applications	NLOS	Non-Line of Sight
MLRS-BCW	Multiple Launch Rocket System-Binary Chemical Warhead	NMC	Not Mission Capable
MLRS-TGW	Multiple Launch Rocket System-Terminal Guidance Warhead	NMCS	Non-Mission Capable Status
MLRS	Multiple Launch Rocket System	NMCS	Non-Mission Capable Supply
MMW	Millimeter Wave	NMIB	New Material Introductory Briefings
MOA	Memorandum of Agreement	NMO	Network Management Office
MOBARPRINT	Mobilization Army Program for Individual Training	NORTHAG	Northern Army Group
MOBTDA	Mobilization Table of Distribution and Allowances	NPDES	National Pollutant Discharge Elimination System
MOI	Memorandum of Instruction	NPL	National Priority List
MOPES	Mobilization and Operations Planning and Execution System	NRC	Non-Recurring Cost
MOS	Military Occupational Specialty	NRDEC	Natick Research, Development and Engineering Center
MPA	Military Personnel, Army	NSA	National Security Agency
MPAC	Materials and Parts Availability Control	NSE	National Security Exemption
MPSS	Military Packaging Simplification Study	NSN	National Stock Number
MQS	Military Qualification Standards	NTC	National Training Center
MRE	Meal, Ready-to-Eat	NWTI	Nuclear Weapons Technical Inspections
MROC	Multi-Command Required Operational Capabilities	O&S	Operating and Support
MRSA	Materiel Readiness Support Activity	OASA(I&L)	Office of the Assistant Secretary of the Army (Installations and Logistics)
MS	Milestone	OASD	Office of the Assistant Secretary of Defense
MS3	Manpower Staffing Standards System	OASYS	Obstacle Avoidance System
MSC	Major Subordinate Command	OB/OD	Open Burning and Open Detonation
MSDOS	Multi-System Disc Operating System	OBCE	Operational Baseline Cost Estimate
		ODCSOPS	Office of the DCS for Operations
		ODCSMT	Office of the DCS for Supply, Maintenance, and Transportation

ODP	Officer Distribution Plan	PCBs	Polychlorinated Biphenyl
OEO	Office of Equal Opportunity	PCI	Productivity Capital Investment
OER	Officer Evaluation Report	PCIF	Procurement Contractor Identification File
OER	Organizational Efficiency Review	PCR	Policy Compliance Review
OICP	Office for International Cooperative Programs	PD	Prototype Development
OIIC	Office for International Industrial Cooperation	PDIP	Program Development Increment Package
OLQUS	On-line Query/Update System	PDM	Program Decision Memorandum
OMA	Operations and Maintenance, Army	PDS-C	Personnel Data System-Civilian
OMB	Office of Management and Budget	PE90	PROUD EAGLE 90
OMMCS	Ordnance Missile/Munition Center and School	PECIP	Productivity Enhancing Capital Investment Program
OPA	Other Procurement Army	PEER	Productivity Enhancements, Efficiencies, and Rewards
OPCON	Operational Control	PEO	Program Executive Office/Officer
OPLAN	Operations Plans	PEO-IEW	Program Executive Office-Intelligence and Electronic Warfare
OPM	Office of Personnel Management	PEO MAIS	PEO Major Army Information Systems
OPM-SANG	Office of the Program Manager, Saudi Arabian National Guard	PEO MIS	PEO, Management Information Systems
OPTADS	Operations Tactical Data Systems	PEO STAMIS	PEO Standard Management Information Systems
ORNL	Oak Ridge National Laboratory	PEP	Producibility Engineering and Planning
ORSA	Operations Research Systems Analysis	PERL	Prepositioned Equipment Requirements List
OSA	Operational Support Airlift	PERSCOM	Personnel Command (Total Army)
OSADBU	Office of Small and Disadvantaged Business Utilization	PGS	Productivity Gain Sharing
OSC	On-Site-Container	PIF	Productivity Investment Funding
OSD	Office of the Secretary of Defense	PII	Pershing II
OSS	Objective Supply System	PIL	Preferred Items List
OST	Order Ship Time	PIP	Product Improvement Program
OT	Operational Testing	PLL	Prescribed Load List
OTEA	U.S. Army Operational Test and Evaluation Agency	PLRS	Position Locating and Reporting System
OTRVTR	OCONUS Travel Tracking System	PLS	Palletized Loading System
OTSG	Office of the Surgeon General	PM	Program/Project Manager
OUSD	Office of the Under Secretary of Defense	PM/AIM/DAIN	Program Manager/Acquisition Information Management/Department of the Army Information Network
P1a	Pershing 1a	PM TEMOD	PM, Test Equipment Modernization
P3I	Preplanned Product Improvements	PM TRADE	Project Manager for Training Devices
PA	Preliminary Assessments	PMCD	Program Manager, Chemical Demilitarization
PA	Procurement Action	PMCS	Preventive Maintenance Check Services
PA	Procurement Appropriation	PMD	Projectile Mortar Disassembly Machine
PA-2	Procurement Appropriation-Spares	PMMP	Program Manager's Master Plan
PAA	Procurement of Ammunition, Army	PMO	Procurement Management Office
PAC	PATRIOT Anti-Tactical Missile Capability	PMP	Productivity Measurement Program
PACX	Private Branch Exchange	PMR	Procurement Management Review
PADDS	Procurement Automated Data and Document System	PMR	Provisioning Master Record
PAD	POMCUS Authorization Document	PMRP	Precious Metals Recovery Program
PALT	Procurement Acquisition Lead Time	PMS	Pedestal Mounted Stinger
PAMUPS	Procurement Automated Manpower Utilization and Projection System	PNM	Price Negotiation Memorandums
PARR	Program Analysis and Resource Review	POC	Point of Contact
PB	Production Base	POMCUS	Prepositioning of Materiel Configured to Unit Sets
PBA	Pine Bluff Arsenal	POM	Program Objective Memorandum
PBA	Productivity Based Award	POP	Performance Oriented Packaging
PBAC	Program and Budget Advisory Committee	POP	Proof of Principle
PBAS	Program Budget Accounting System	POSH	Prevention of Sexual Harassment
PBD	Program Budget Decision	PPBES	Planning, Programing, Budgeting and Execution System
PBG	Program Budget Guidance	PPBES	Programming, Budgeting and Execution System
PBIS	Productivity Based Incentive System	PPR	Procurement Program Review
PBO	Property Book Officer		
PC	Personal Computer		

PPS Production Planning Schedule
PQT Prototype Qualification Test
PR Pocket Radiac
PRAG Performance Risk Analysis Group
PRC Planning Research Corporation
PRIDE Production Review Integration Database
PRMP Production Readiness Master Plan
PRON Procurement Request Order Number
PSO Primary Standardization Office
PSSP Personnel Security and Surety Program
PUAD Pueblo Army Depot
PUDA Pueblo Army Depot Activity
PWD Procurement Work Directives
PY Program Year
QDR Quality Deficiency Reports
QDR/EIR Quality Deficiency Reports/Equipment Improvement Recommendations
QPI Quantum Process Improvement
QRIP Quick Return on Investment Program
QRR Quick Reaction Requirement
QSTAGS Quadripartite Standardization Agreements
R&A Review and Analysis
R&S Readiness and Sustainability
RAAWS Ranger Anti-Armor/Anti-personnel Weapon System
RAC Resource Action Committee
RAM Reliability and Maintainability
RAP Remedial Action Projects
RAPS RAM Air Parachute System
RASC Recruiting Area Staffing Committee
RASFIARS Retail Army Stock Fund Financial Inventory Accounting and Reporting System
RASP Rapid Acquisition of Spare Parts
RBM Readiness Based Maintenance
RC Reserve Component
RCRA Resource Conservation and Recovery Act
RD&A Research, Development and Acquisition
RDA&S Research, Development, Acquisition and Standardization
RDAISA Research, Development and Acquisition Information Systems Agency
RDDS Research and Development Descriptive Summary
RDEC Research, Development and Engineering Center
RDE Research, Development and Engineering
RDTE Research, Development, Test and Evaluation
RDX Research Development Explosive
REACT Reject Entry and Correction Technique
READY 2000 Revitalization of the Army Depots for the Year 2000
REMBASS Remotely Monitored Battlefield Sensor System
RESIIAPE Resource Self-Help Affordability Planning Effort
RFI Reactor Facility Inspections
RFP Request for Proposal
RIDB Readiness Integrated Data Base
RMOO Resource Management Operations Office

RM Resource Management
RMP Reprogrammable Microprocessor
RMU Resource Management Update
ROC Required Operational Capability
ROD Reports of Discrepancy
ROF Royal Ordnance Factory
ROWPU Reverse Osmosis Water Purification Unit
RPMA Real Property Maintenance Activity
RPSTIL Repair Parts and Special Tools List
RPT Rocket Powered Target
RRAD Red River Army Depot
RRP Radon Reduction Program
RSCAAL Remote Sensing Chemical Agent Alarm
RSI Rationalization, Standardization and Interoperability
RSIAC Reverse Support List Allowance Computation
S&T Science and Technology
SA Secretary of the Army
SAAC Security Assistance Accounting Center
SAACONS Standard Army Automated Contracting System
SAAD Sacramento Army Ammunition Depot
SADARM Search and Destroy Armor
SAG Study Advisory Group
SAILS Standard Army Intermediate Level Supply Subsystem
SAMS Standard Army Maintenance System
SANG Saudi Arabian National Guard
SAP Special Access Program
SAPOC Special Access Program Oversight Committee
SAR Selected Acquisition Reports
SARA Superfund Amendments and Reauthorization Act
SARDA Secretary of the Army for Research, Development, and Acquisition
SARSS-1 Standard Army Retail Level Supply System
SAS Security in Automated Systems
SAT Software Acceptance Test
SATCOMA U.S. Army Satellite Communications Agency
SAWE-RF Simulated Area Weapons Effect-Radio Frequency
SCAN Summary Command Analysis Notebook
SCCR Supplemental Contractor Cost Reports
SCIF Sensitive Compartmented Information Facilities
SCMR Special Contract Management Review
SCORE Secure Command Operations Reports and Exercise
SCPE P3I Simplified Collective Protection Equipment Pre-planned Product Improvement
SCR Subordinate Command Representatives
SCR System Change Requests
SCTS Systems Component Test Station
SDC Strategic Defense Command
SDIO Strategic Defense Initiative Organization
SDK Skin Decontamination Kit
SDS Standard Depot System
SDS System Demonstration Substage

SDT	Second Destination Transportation	STU	Secure Telephone Unit
SEC	Secure Environment Contracting	SUPCOM	Support Command
SECDEF	Secretary of Defense	SUSV	Small Unit Support Vehicle
SELCOM	Select Committee	SWAPDOP	Southwest Asia Petroleum Distribution Operational Project
SEN	Satellite Education Network	SWQT	Software Qualification Test
SES	Senior Executive Service	T&E	Test and Evaluation
SESAME	Selected Essential-Item for Availability Method	TAA	Total Army Analysis
SGA	Standard of Grade Authorization	TAADS	Total Army Authorization Documentation System
SGS	Smoke Generator Set	TACCS	U.S. Tactical Army Combat Service Support Computer
SIAMS	Single Integrated Ammunition Management System	TACFIRE	Tactical Fire Direction System
SIDPERS	Standard Installation/Division Personnel System	TACOM	U.S. Army Tank-Automotive Command
SIMATS	Supplementary Interim Medium Antitank System	TAC	Transportation Account Code
SIMNET-D	Simulator Networking for Battlefield Developments	TAMIS	Training Ammunition Management System
SINCGARS	Single Channel Ground and Airborne Radio System	TAMMC	Theatre Army Materiel Management Center
SIP	System Improvement Plan	TAMP	Theater Aviation Maintenance Program
SITREP	Situation Report	TAP	The Army Plan
SIWG	Standardization Improvement Working Group	TASP	The Army Study Program
SKAPS	Skills, Knowledge, Abilities, and Personal Characteristics	TBAG	Tech-Base Advisory Group
SKO	Sets, Kits, and Outfits	TBWG	Tech Base Working Group
SLAC	Reverse Support List Allowance Card	TC	Type Classification
SLEP	Service Life Extension Program	TCC	Telecommunications Center
SLMC	Senior Leaders Maintenance Conference	TCT	Tactical Computer Terminals
SLRP	Strategic Long-Range Plan	TD/CMS	Technical Data/Configuration Management System
SMCA	Single Manager for Conventional Ammunition	TDP	Technical Data Package
SMEE	Subject Matter Expert Exchange	TDR	Training Device Requirement
SMPT	School of Military Packaging Technology	TEAD	Tooele Army Depot
SMR	Surety Management Review	TECOM	U.S. Army Test and Evaluation Command
SMT	Supply, Maintenance and Transportation	TECRAS	Technical Reconnaissance and Surveillance
SOCOM	Special Operations Command	TEC	Type Equipment Codes
SOF	Special Operations Forces	TELNET	Telecommunication Network
SOFMOD	Special Operations Forces Modernization of Radio	TEMP	Test Equipment Management Program
SOG-X	Staff Officer's Guide-Extension	TEMOD	Test Equipment Modernization
SOI	Surety and Operational Inspection	TEMP	Test and Evaluation Master Plan
SOMARDS	Standard Operation Maintenance Army, Research and Development System	TF	Technological Fixes
SOP	Standard Operating Procedure	TFT	Technical Feasibility Testing
SOUTHCOM	Southern Command	TLC	Terminal Line Controls
SOW	Statement of Work	TMCA	Transportation Movement Control Agency
SPC	Statistical Process Control	TMC	The Marquardt Company
SRA	Separate Reporting Activity	TMDE	Test, Measurement and Diagnostic Equipment
SRA	Systems Research and Application	TMD	Tactical Missile Defense
SRFX	Service Response Force Exercise	TOCDF	Tooele Chemical Disposal Facility
SSA	Source Selection Authority	TOW 2 SS	Tube-Launched, Optically Tracked, Wire Command-Link (2) Sub System
SSC	Strategic Systems Committee	TPF	Total Package Fielding
SSEB	Source Selection Evaluation Board	TPFDL	Time Phased Force Deployment List
STAMIS	Standard Army Information Management Systems	TPGID	Tank Precision Gunnery Inbore Device
STANAGS	Standardization Agreements	TQM	Total Quality Management
STAR	Strategic Technologies for the Army	TQM/PDQ	Total Quality Management/People Dedicated to Quality
STAR	System Threat Assessment Report	TR	Theater Reserve
STARTEX	Start of Exercise	TRACE-P	Total Risk Assessing Cost Estimate for Production
STF	Special Task Force	TRADOC	U.S. Army Training and Doctrine Command
STMR	Standard Transportation Movement Request		

TROSCOM	U.S. Army Troop Support Command	USAMMDA	U.S. Army Medical Materiel Development Activity
TRR	Technical Risk Reduction	USAMRICD	U.S. Army Medical Research Institute of Chemical Defense
TRW	Thompson Ramo Woolridge Corporation	USARDSG-JA	U.S. Army Research, Development and Standardization Group-Japan
TSC	TMDE Support Center	USAREUR	United States Army, Europe
TSCA	Toxic Substance Control Act	USASAC	U.S. Army Security Affairs Command
TSO	TMDE Support Operations	USATSAC	U.S. Army TMDE Support Activity-CONUS
TSP	Threat Support Plans	USATSG	U.S. Army TMDE Support Group
TI/UT	Technical Test/User Test	USATTC	U.S. Army Tropic Test Center
TTCP	Technical Cooperation Program	USA	Under Secretary of the Army
TIS	Tank Thermal Sight	USSOCOM	U.S. Special Operations Command
TISB	Test Threat Support Packages	UST	Underground Storage Tank Systems
TUDF-R	Total Unit Development Fielding-Review	VCSA	Vice Chief of Staff of the Army
TUSA	Third U.S. Army	VE	Value Engineering
TVF	Tactical Vehicle Fleet	VECP	Value Engineering Change Proposal
TWG	Transportation Work Group	VEESS	Vehicle Engine Exhaust Smoke System
UBSIHW	Utah's Bureau of Solid and Hazardous Waste	VENUS	Video Enhanced User System
UCR	Unit Cost Report	VERT	Venture Evaluation and Review Technique
UGSMG	Underground Storage Management Group	VHS	Vint Hill Station
ULCANS	Ultra Light Camouflage Nets	VIGS	Video Disc Gunnery Simulation
ULLS	Unit Level Logistics System	VLAMO	Vulnerability Lethality Assessment Management Office
UMAD	Umatilla Army Depot	VTC	Video Teleconferencing
UMDA	Umatilla Depot Activity	WARLOGS	War Reserve, LOGPLAN, and Sustainability
UMMIPS	Uniform Military Movement Issue Priority System	WARSL	War Reserves Stockage List
USAAA	U.S. Army Audit Agency	WATCH	Warning Against Toxic Chemical Hazards
USA SPSA	U.S. Army Special Projects Support Authority	WG	Wage Grade
USAAVNC	U.S. Army Aviation Center and School	WO	Warrant Officer
USABRDL	U.S. Army Biological Research and Development Center	WRAP	War Reserves Automated Process
USACCE	U.S. Army Contract Command Europe	WRF	Woodbridge Research Facility
USACRTC	U.S. Army Cold Region Test Center	WRMAG	Water Resources Management Action Group
USAEHA	U.S. Army Environmental Hygiene Agency	WRSA	War Reserve Stocks for Allies
USAFAC	U.S. Army Finance and Accounting Center	WS/SPA	Weapon System Supply Performance Analyzer
USAFISA	U.S. Army Force Integration Support Agency	WSMR	White Sands Missile Range
USAISC	U.S. Army Information Systems Command	WSSIC	Weapons and Space Systems Intelligence Committee
USAMARDA	U.S. Army Manpower Requirements and Documentation Activity	WSTA	Weapon System Technician Assessments

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LOG MGT SPEC	MS C. CURTIS	5S44	8410/8409
LOG MGT SPEC	VACANT	5S44	8410/8409
LOG MGT SPEC	MRS P. JENIFER	5S44	8410/8409
LOG MGT SPEC	MR H. LEGNER	5S44	8411/8412
LOG MGT SPEC	MR E. EMMONS	5S44	8410/8409
SECY	MRS J. UNRATH	5S44	8410/8409
CLK TYP	MRS B. JESSER	5S44	8410/8409

**REGIONAL DIVISION B
AMSAC-ME-RB**

CHIEF	MR D. WRIGHT	5S45	8412/8416
LOG MGT SPEC	MR I. YOUNG	5S45	8412/8416
LOG MGT SPEC	MR M. ALEXANDER	5S45	8412/8416
LOG MGT SPEC	MR W. BRADLEY	5S45	8412/8416
LOG MGT SPEC	MS V. WHITE	5S45	8412/8416
LOG MGT SPEC	MS J. ELZEIN	5S45	8412/8416
LOG MGT SPEC	MR G. CATT	5S45	8412/8416
LOG MGT SPEC	MS C. BRILLHART	5S45	8412/8416
LOG MGT SPEC	MS L. JONES	5S45	8412/8416
SECY	MS A. ROBERSON	5S45	8412/8416
CLK TYP	MS C. SEYLLER	5S45	8412/8416

**REGIONAL DIVISION C
AMSAC-ME-RC**

CHIEF	MR S. JONES	5S54	8391/8413
LOG MGT SPEC	MS N. MAHR	5S45	8413/8414
LOG MGT SPEC	MR M. FREEMAN	5S53	8391/8413
LOG MGT SPEC	MS N. MONK	5S53	8391/8413
LOG MGT SPEC	MR H. BRYAN	5S53	8391/8413
LOG MGT SPEC	MS B. TUCKER	5S53	8391/8413
LOG MGT SPEC	MR K. WEBSTER	5S53	8391/8413
LOG MGT SPEC	MS B. PATTEN	5S53	8391/8413
SECY	MS M. BADGER	5S54	8391/8413
CLK TYP	MS M. BAUX	5S53	8391/8413

**MIDEAST
ALEXANDRIA**

DIRECTOR	
SECY	

MIDDLE EAST

CHIEF	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
SECY	
CLK/TYP	

ARABIA

CHIEF	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
SECY	
CLK/TYP	

NO

CHIEF	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
LOG MGT SPEC	
SECY	
CLK/TYP	

U.S. ARMY SECURITY AFFAIRS COMMAND

5001 EISENHOWER AVENUE, ALEXANDRIA VA 22333-0001

STAFF DIRECTORY

2

CG USASAC DCS FOR INTERNATIONAL SECURITY PARTNERSHIPS AMSAC

CMD GENERAL	MG T. G. LIGHTNER	5E22	8380
AIDE de CAMP	CPT T. KOUFAS	5E22	8380
SECY	MISS G. PHILLIPS	5E22	8380

DEPUTY AMSAC-PD

DEPUTY	MR P. DONOVAN	5E22	8383
SECY	MS B. ROHLAND	5E22	8383

DEPUTY (MOBILIZATION AUI AMSAC-

DEPUTY BG R. L. RUTH

ADMINISTRATIVE OFFICE - ALEX AMSAC-SA

MR R. KALEY	5E18	8384/95
MR S. CHARLES	5E18	8385/89
MS D. CASSEDY	5E18	6152
MS F. JONES	5E18	8385/89
VACANT	5E18	8385/89
VACANT	5S56	8395
VACANT	5E18	8385/89

ADMINISTRATIVE OFFICE - NCAD AMSAC-SA-N

MR B. GOODENOW	6947/6918
MR W. GIBBLE	7052/6947
MRS L. DAVIS	6806/6866
MR L. BEAM	6866/6806
MRS J. BAKER	6932/6906
VACANT	7904
MR S. WINDER	7851
MR D. BYERS	7851
MRS J. BECKER	6918/6947

VIEW AND AUDIT COMPLIANCE OFFICE CUMBERLAND, PA 17070-5096 AMSAC-SI

MR W. MORRISON	6312
MRS F. BAUGHMAN	6905

CHIEF OF STAFF AMSAC-S

CHIEF OF STAFF	COL W. WINSLOW	5S56	8384
SGS	VACANT	5S56	8394
SECY	MS A. STEPHENSON	5S56	8384

SA3 PMO AMSAC-I

PM	MR D. MURTON
SUPR PROJ REP	MR C. FREEDEN
COMP SYS ANAL	MS L. ZETTERH
LOG MGT SPEC	MR D. HUGHES
LOG MGT SPEC	MR J. DIXON
ADMIN ASST	MS G. HANBACI

SAFS ST. LOUIS AMSAC-

SUPR PROJ REP	MR N. KEEI
LOG MGT SPEC	MR G. RICE
LOG MGT SPEC	MR J. CRO
COMP SYS ANAL	MS G. PAD

MIDEAST/AFRICA DIRECTORATE ALEXANDRIA, VA 22333-0001 AMSAC-MM

DIRECTOR	COL R. GOODWIN	5S22	8451/8454
SECY	MS L. SCHWEPPE	5S22	8451/8454

MIDEAST/AFRICA DIVISION AMSAC-MM-MA

CHIEF	MR H. SCHARIG	5S28	8458/8459
LOG MGT SPEC	MS L. GASKINS	5S28	8458/8459
LOG MGT SPEC	MR E. MURPHY	5S28	8458/8459
LOG MGT SPEC	MR J. GATES	5S28	8458/8459
LOG MGT SPEC	MS M. JACKSON	5S28	8458/8459
SECY	MS J. CONLEY	5S28	8458/8459
CLK/TYP	MS C. FANTAUZZI	5S28	8458/8459

ARABIAN PENINSULA DIVISION AMSAC-MM-AP

CHIEF	LTC W. MORGAN	5S32	8450/8447
LOG MGT SPEC	CPT W. TRICE	5S32	8450/8447
LOG MGT SPEC	MR C. LeFLORE	5S28	8458/8459
LOG MGT SPEC	MR F. WELSH	5S32	8450/8447
LOG MGT SPEC	MS C. FIORI	5S32	8450/8447
LOG MGT SPEC	VACANT	5S32	8450/8447
LOG MGT SPEC	MR M. GARCIA	5S32	8450/8447
LOG MGT SPEC	MR W. TURNER	5S42	8450/8447
SECY	VACANT	5S32	8450/8447
CLK/TYP	MS K. SCHWEPPE	5S32	8450/8447

NORTH AFRICA DIVISION AMSAC-MM-NA

CHIEF	LTC R. LUCKENBILL	5S19	8398/8471
LOG MGT SPEC	MS M. HOPKINS	5S19	8398/8471
LOG MGT SPEC	MR J. DRUEKE	5S19	8398/8471
LOG MGT SPEC	MS J. CLARK	5S19	8398/8471
LOG MGT SPEC	MR G. NORFOLK	5S19	8398/8471
LOG MGT SPEC	VACANT	5S19	8398/8471
LOG MGT SPEC	MS C. WIARD	5S28	8458/8459
SECY	MS A. CEPHAS	5S19	8398/8471
CLK/TYP	MS L. WALLEY	5S19	8398/8471

DIRECTOR RESOURCE MANAGEMENT ALEXANDRIA, VA 22333-0001 AMSAC-R

DIR	MR J. SMITH	4S52	3309/03
SECY	MS M. MERRITT	4S52	3309/03
DEP. RES MGT	MRS C. MURTOMAKI	4S52	3303/04
SECY	MS S. SCHUTT	4S52	3308/3305

FINANCIAL PROCEDURES DIVISION ALEXANDRIA, VA 22333-0001 AMSAC-RP

CHIEF	MR R. GILMAN	4S51	3306/07
PROG ANAL	MRS P. JOSEPH	4S51	3306/07
FIN SYS ANAL	VACANT	4S51	3306/07
FIN SYS ACCT	MR T. CALLAHAN	4S51	3306/07
FIN SYS ACCT	MR R. GRAMAM	4S51	3306/07
FIN SYS ACCT	MR J. WHEELER	4S51	3306/07
SECY	MS T. JARRELL	4S51	3306/07

SECURITY AFFAIRS RESOURCES DIVISION AMSAC-RB-R

CHIEF	VACANT	4S52	3302/03
MGT ANAL	VACANT	4E13	1897/98
BUDGET ANAL	MS N. LARKEV	4E13	1897/98
BUDGET ANAL	MR C. COVEY	4E13	1897/98
BUDGET ANAL	VACANT	4S51	3302/03
BUDGET ANAL	MS W. BIAS	4S51	3302/03
BUDGET ANAL	MS R. WALTER	4S51	3302/03
BUDGET ANAL	MS L. DEVERS	4S51	3302/03
BUDGET ANAL	MR E. ROSA	4S51	3302/03
MGT ANAL	MS N. CANNON	4S51	3302/03
BUDGET ASST	MS P. NEWAY	4S51	3302/03
INTERN	MS C. QUAST	4S51	3302/03
SECY	VACANT	4E13	1897/98

EUROPE/AFRICA DIRECTORATE NEW CUMBERLAND, PA 17070-5096 AMSAC-OE

DIRECTOR	MR C. ODELL	6549
SECY	MS J. SMITH	6549

EUROPE DIVISION AMSAC-OE-C

CHIEF	MS J. BUCHANAN	6544
CCM BR OE-CA	MR T. BRIGHTBILL	7940
CCM BR OE-CB	MS E. BOYER	7911
CCM BR OE-CC	MS M. LINDSEY	7007
SECY	MS P. GODDARD	6544

AFRICA DIVISION AMSAC-OE-D

CHIEF	MR R. NEYDL	7007
CCM BR OE-DA	MS L. YEAGER	7011
CCM BR OE-DB	MR S. RHODAS	7900
CCM BR OE-DC	MS C. FINCH	7700
SECY	MRS L. CLARK	7000

ASIA/PACIFIC/MIDEAST/AMERICAS DIRECTORATE NEW CUMBERLAND, PA 17070-5096 AMSAC-OX

DIRECTOR	MR V. STASNEY	703
SECY	MRS N. SHUTT	703

ASIA/PACIFIC DIVISION AMSAC-OX-A

**DEPUTY CG
(MOBILIZATION AUGMENTATION)
AMSAC-PD**

Y BG R. L. RUTH 5E22 8384

1 SEPTEMBER 1989
THIS IS NOT AN OFFICIAL ORGANIZATION CHART

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**SA3 PMO
AMSAC-D**

MR D. MURDOMAKI	5N21	4018/4019
MR C. FREEDENTHAL	5N21	4018/4019
MS L. ZETTERHOLM	5N21	4018/4019
MR D. HUGHES	5N21	4018/4019
MR J. DIXON	5N21	4018/4019
MS G. HANBACK	5N21	4018/4019

**WASHINGTON FIELD OFFICE
ALEXANDRIA, VA 2333-0001
AMCPM-NGW**

CHIEF	LTC H. ROLLINS	5S32	9126/9162
ADMIN SVC ASST	MRS K. DARIUS	5S32	9126/9162
SECY	MS S. HALL	5S32	9126/9162

**SAFSO
ST. LOUIS, MO
AMSAC-DS**

MR N. KEELING	AV	693-5114
MR G. RICE	AV	693-5114
MR J. CROWNOVER	AV	693-5114
MS G. PADILLIA	AV	693-5114

**PM SAUDI ARABIAN NATIONAL GUARD
MODERNIZATION PROGRAM
RIYADH, SA
AMCPM-NG**

CHIEF	BG WALDO D. FREEMAN
DPM	COL CHARLES L. SMITH
CHIEF OF STAFF	MR R. LARSEN

**DEPUTY FOR OPERATIONS
NEW CUMBERLAND, PA 17070-5096
AMSAC-O**

DEPUTY	COL W. BROWN	6800
SECY	MRS J. BUCHANAN	6800
CIV EX OP	MR J. RUTHERFORD	6801
SECY	MRS N. ARNETT	6801

**ICA DIRECTORATE
AND, PA 17070-5096
ASAC-OE**

C. ODELL	6549/6907
J. SMITH	6549/6907

**PE DIVISION
SAC-OE-C**

J. BUCHANAN	6544/6705
T. BRIGHTBILL	7946/7651
E. BOYER	7918/7649
M. LINDSEY	7007/6545
P. GODDARD	6544/6705

**CA DIVISION
SAC-OE-D**

R. NEYDL	7003/7249
L. YEAGER	7013/7642
S. RHODAS	7903/6041
C. FINCH	7708/7921
S. L. CLARK	7003/7249

**MIDEAST/AMERICAS
DIRECTORATE
AND, PA 17070-5096
ASAC-0X**

V. STASNEY	7033/7826
S. N. SHUTT	7033/7826

**PACIFIC DIVISION
SAC-0X-A**

**DIRECTORATE FOR LOGISTICS SUPPORT
NEW CUMBERLAND, PA 17070-5096
AMSAC-OL**

DIRECTOR	MR D. ZYDORCZYK	6257/6851
SECY	MRS S. M. SHANK	6257/6851

**COOPERATIVE LOGISTICS DIVISION
AMSAC-OL-C**

CHIEF	MR R. RAUTZAHN	7434/6757
GEN SUP SPEC	MR J. THOMPSON	6477/6911
GEN SUP SPEC	MR M. BUCHANAN	6477/6911
GEN SUP SPEC	MR J. CASTILLO	6477/6911
GEN SUP SPEC	MR L. STRAUB	6477/6911
GEN SUP SPEC	VACANT	6477/6911
GEN SUP SPEC	MR M. HAHN	6477/6912
GEN SUP SPEC	MR M. STEPHENS	6477/6756
SECY	MS M. O'DONNELL	7434/6757

**LOGISTICS SYSTEM SUPPORT DIVISION
AMSAC-OL-S**

CHIEF	MR R. ALPAUGH	7389
SECY	MRS J. FARNER	7389

**SYSTEMS/PROCEDURES BRANCH
AMSAC-OL-SP**

CHIEF	MR G. MYERS	6679/6980
SUP/SYS ANAL	MR V. UHLER	6980/6679
SUP/SYS ANAL	MR R. PEPE	6980/6679
SUP/SYS ANAL	MS B. HENNEY	6980/6679
SUP/SYS ANAL	MR J. MAUCH	6980/6679
SUP/SYS ANAL	MR J. MCGINLEY	6980/6679
SUP/SYS ANAL	MRS M. DAVIS	6980/6679
SUP/SYS ANAL	MRS M. KING	6980/6679

**INFORMATION MANAGEMENT DIRECTORATE
NEW CUMBERLAND, PA 17070-5096
AMSAC-IM**

DIRECTOR	MR R. SINGER	6771/6493
SECY	MRS S. RHODES	6771/6493

**INFORMATION MANAGEMENT OFFICE
AMSAC-IM-O**

CHIEF	MR C. HILBURN	6075
VI MGR	MR H. WHITE	7075
RCDS MGR	MR J. WENGER	6209
SECY	MRS T. MEASE	6075

**SYSTEMS INTEGRATION DIVISION
AMSAC-IM-A**

CHIEF	MR C. DECKER	7021
SECY	MS T. DAVIS	7021

**CASE/FINANCIAL MANAGEMENT APPLICATION
DEVELOPMENT DIVISION
AMSAC-IM-D**

CHIEF	MR S. ANDERSON	6900
SECY	MRS D. ALBRIGHT	6900

**LOGISTICS APPLICATION
DEVELOPMENT DIVISION
AMSAC-IM-L**

CHIEF	MR M. NELSON	7155
SECY	VACANT	7155

**COMPUTER MANAGEMENT DIVISION
AMSAC-IM-C**

SECY	MS D. LAYTON	5N23	8611
CLK TYP	MS A. DELONG	5N25	8611

**LATIN AMERICA DIVISION
AMSAC-MA-LA**

CHIEF	LTC H. TRUMAN	5N51	9763/9768
LOG MGT SPEC	MR D. WEBSTER	5N51	9763
LOG MGT SPEC	MR W. MOORE	5N51	9763
LOG MGT SPEC	VACANT	5N51	9763
LOG MGT SPEC	MS C. ROBERTS	5N51	9763
LOG MGT SPEC	MS M. PADGETT	5N51	9763
LOG MGT SPEC	MS P. COLLINS	5N51	9763
SECY	MRS B. MILLER	5N51	9763
CLK TYP	VACANT	5N51	9763

**REGIONAL DIVISION C
AMSAC-ME-RC**

CHIEF	MR S. JONES	5S54	8391/8413
LOG MGT SPEC	MS N. MAHR	5S45	8413/8414
LOG MGT SPEC	MR M. FREEMAN	5S53	8391/8413
LOG MGT SPEC	MS N. MONK	5S53	8391/8413
LOG MGT SPEC	MR H. BRYAN	5S53	8391/8413
LOG MGT SPEC	MS B. TUCKER	5S53	8391/8413
LOG MGT SPEC	MR K. WEBSTER	5S53	8391/8413
LOG MGT SPEC	MS B. PATTEN	5S53	8391/8413
SECY	MS M. BADGER	5S54	8391/8413
CLK TYP	MS M. BAUX	5S53	8391/8413

AMSAC-MM-N

CHIEF	LTC R. LUCKENBIL
LOG MGT SPEC	MS M. HOPKINS
LOG MGT SPEC	MR J. DRUEKE
LOG MGT SPEC	MS J. CLARK
LOG MGT SPEC	MR G. NORFOLK
LOG MGT SPEC	VACANT
LOG MGT SPEC	MS C. WIARD
SECY	MS A. CEPHAS
CLK/TYP	MS L. WALLEY

**OFFICE FOR INTERNATIONAL INDUSTRIAL
COOPERATION
ALEXANDRIA, VA 22333-0001
AMSAC-MI**

CHIEF	MR D. LEACH	5S10	8371/5675
IND ENGR	MR H. HASSMAN	5S10	8371/5675
LOG MGT SPEC	MS C. CAMPBELL	5S10	8371/5675
LOG MGT SPEC	MR B. OSSMAN	5S10	8371/5675
IND ENGR	MR J. WAMSLEY	5S10	8371/5675
EXP LIC OFF	MS L. COOPER	5S10	9177/8173
EXP LIC OFF	MS J. RUOFF	5S10	9177/8173
EXP LIC OFF	MS S. COMITZ	5S10	9177/8173
EXP LIC ASST	MS D. TARON	5S10	9177/8173
SECY	MS L. MURPHY	5S10	8371/5675
CLK TYP	MS E. WRIGHT	5S10	8371/5675

**POLICY, PLANS & OP
SUPPORT DIREC
ALEXANDRIA, VA 22
AMSAC-N**

DIRECTOR	MR R. L. LUM
SECY	MRS M. LEHMAI

**PLANS & OPERATIONAL S
AMSAC-M**

CHIEF	MR J. CARSON
LOG MGT SPEC	VACANT
LOG MGT SPEC	MR A. D'AMBRI
LOG MGT SPEC	MR R. KENDEL
LOG MGT SPEC	MR D. HICKS
LOG MGT SPEC	MR B. NEWMAN
LOG MGT SPEC	MRS B. REXRO
LOG MGT SPEC	MR D. BOYING
GEN SUP SPEC	MRS M. NORT
SECY	MS B. NORTO
CLK TYP	VACANT

**POLICY & PROCED
AMSAC-**

CHIEF	MR J. THOM
LOG MGT SPEC	MS D. BURGI
LOG MGT SPEC	MR B. NIDAY
LOG MGT SPEC	MS S. NORFI
LOG MGT SPEC	MR A. ORR
LOG MGT SPEC	MR R. LEE
LOG MGT SPEC	MR T. ROGE
LOG MGT SPEC	MR W. QUIN
LOG MGT SPEC	MS M. STRI
LOG MGT SPEC	MR R. LEE
SECY	MS Z. RONI
CLK/TYP	MS D. DELF

AMSAC-MM-NA

CHIEF	LTC R. LUCKENBILL	5S19	8398/8471
LOG MGT SPEC	MS M. HOPKINS	5S19	8398/8471
LOG MGT SPEC	MR J. DRUEKE	5S19	8398/8471
LOG MGT SPEC	MS J. CLARK	5S19	8398/8471
LOG MGT SPEC	MR G. NORFOLK	5S19	8398/8471
LOG MGT SPEC	VACANT	5S28	8458/8459
LOG MGT SPEC	MS C. WIARD	5S19	8398/8471
SECY	MS A. CEPHAS	5S19	8398/8471
CLK/TYP	MS L. WALLEY	5S19	8398/8471

MGT ANAL	VACANT	4E13	1897/98
BUDGET ANAL	MS N. LARKEN	4E13	1897/98
BUDGET ANAL	MR C. COVEY	4E13	1897/98
BUDGET ANAL	VACANT	4S51	3302/03
BUDGET ANAL	MS W. BIAS	4S51	3302/03
BUDGET ANAL	MS R. WALTER	4S51	3302/03
BUDGET ANAL	MS L. DEVERS	4S51	3302/03
BUDGET ANAL	MR E. ROSA	4S51	3302/03
MGT ANAL	MS N. CANNON	4S51	3302/03
BUDGET ASST	MS P. NEWWEY	4S51	3302/03
INTERN	MS C. QUAST	4E13	1897/98
SECY	VACANT		

CCM BR OE-DB	MR S. RHODES
CCM BR OE-DC	MS C. FINCH
SECY	MRS L. CLARK

**POLICY, PLANS & OPERATIONAL
SUPPORT DIRECTORATE
ALEXANDRIA, VA 22333-0001
AMSAC-MP**

DIRECTOR	MR R. L. LUM	5S42	8439
SECY	MRS M. LEHMAN	5S42	8439

**PLANS & OPERATIONAL SUPPORT DIVISION
AMSAC-MP-P**

CHIEF	MR J. CARSON	5S29	5418/7551
LOG MGT SPEC	VACANT	5S42	8443/44
LOG MGT SPEC	MR A. D'AMBROSIA	5S42	8440/44
LOG MGT SPEC	MR R. KENDEL	5S42	8440/43
LOG MGT SPEC	MR D. HICKS	5S42	8440/43
LOG MGT SPEC	MR B. NEWMAN	5S27	8440/43
LOG MGT SPEC	MRS B. REXRODE	5S42	8468/69
LOG MGT SPEC	MR D. BOYINGTON	5S42	8440/44
GEN SUP SPEC	MRS M. NORTON	5S27	8468/69
SECY	MS B. NORTON	5S29	5418/7551
CLK TYP	VACANT	5S27	8468/69

**POLICY & PROCEDURES DIVISION
AMSAC-MP-R**

CHIEF	MR J. THOMAS	5S31	8433/34
LOG MGT SPEC	MS D. BURGESS	5S31	8433/34
LOG MGT SPEC	MR B. NIDAY	5S31	8423/24
LOG MGT SPEC	MS S. NORFOLK	5S31	8423/24
LOG MGT SPEC	MR A. ORR	5S31	8423/24
LOG MGT SPEC	MR R. LEE	5S31	8433/38
LOG MGT SPEC	MR T. ROGERS	5S31	8433/24
LOG MGT SPEC	MR W. QUINN	5S31	8423/33
LOG MGT SPEC	MS M. STREVEY	5S31	8423/33
LOG MGT SPEC	MR R. LEE	5S31	8433/34
SECY	MS Z. RONAN	5S31	8433/34
CLK/TYP	MS D. DeLASHMITT	5S31	8433/34

**FINANCIAL SYSTEMS OFFICE
NEW CUMBERLAND, PA 17070-5096
AMSAC-RB-S**

CHIEF	MR T. HARPSTER	6334
SECY	MS A. BASESHORE	7486

**PRODUCTIVITY AND MANAGEMENT DIVISION
NEW CUMBERLAND, PA 17070-5096
AMSAC-RE**

CHIEF	MR J. ANDERSON	6081
SECY	MS J. MARTIN	6081

**FINANCE AND ACCOUNTING DIVISION
NEW CUMBERLAND, PA 17070-5096
AMSAC-RF**

CHIEF	MR R. DAWS	7408
SECY	MS K. BROOKER	7374

**QUALITY ASSURANCE BRANCH
AMSAC-RF-Q**

CHIEF	MR A. MATAIA	6805/7351
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**OBLIGATION AUTHORITY CONTROL BRANCH
AMSAC-RF-C**

CHIEF	MR L. MOHN	7277
SECY	MRS C. COX	7277

**DIRECT CITE ACCOUNTING BRANCH
AMSAC-RF-D**

CHIEF	MR R. SMITH	6972
SECY	MS D. MEYERS	6392

**FINANCIAL OPERATIONS BRANCH
AMSAC-RF-O**

CHIEF	MR T. DIXON	6994
SECY	MS D. TALARICO	6994

**ASIA/PACIFIC/MIDEAST/AMER
DIRECTORATE
NEW CUMBERLAND, PA 17070-5096
AMSAC-OX**

DIRECTOR	MR V. STASNEY
SECY	MRS N. SHUTT

**ASIA/PACIFIC DIVISION
AMSAC-OX-A**

CHIEF	MR J. HIEBERT
CCM BR OX-AA	MRS P. CRAIG
CCM BR OX-AB	MS B. WIEST
CCM BR OX-AC	MR D. CRIGGER
SECY	MRS J. OLLER

**MIDEAST/AMERICAS DIVISION
AMSAC-OX-B**

CHIEF	MR J. JOHNSON
CCM BR OX-BA	MR B. OWENS
CCM BR OX-BB	MRS P. POLES
CCM BR OX-BC	MR G. REINERT
SECY	MRS V. GUYER

**DIRECTORATE FOR PRODUCT AS
NEW CUMBERLAND, PA 17070-5096
AMSAC-OQ**

DIRECTOR	MR G. GRIMES
QA SPEC	MR C. HESS
QA SPEC	MR V. SARABIA
QA SPEC	MR G. BENNETT
QA SPEC	MR J. DECKER
QA SPEC	MR V. CURTIS
QA SPEC	MR J. SMITH
QA SPEC	MR A. WYSOCKI
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 Msl, C-E Div.....MR G. B. LANGFORD.....9N08 48285 AMCPD-PM
 Wpns & Tkd Cbt Veh Div.....MR A. O. ELKINS.....9N08 48288 AMCPD-PT
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 Ind Mob Plan Div.....MR R. C. FABRIE.....9E10 48225 AMCPD-IR
 ADCS for Ind Engineering.....MR J. E. HOLVOET.....8-793-5611 AMCPD-B
 IEA Detachment.....MR C. J. DIGIANDOMENICO.....9N08 48289 AMCPD-BD

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 Proc Approp Mgt Div.....MR J. E. LYNN.....8548 45706 AMCDE-PP
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 Missiles Div.....COL J. H. BIRRAANE.....7N38 48787 AMCDE-M
 Special Operations Div.....LTC L. J. CURL.....7550 49840 AMCDE-F
 Support Systems Div.....COL J. A. PETROLINO.....G1C02 43600 AMCDE-S
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SPECIAL SECURITY COMMAND

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 NCOIC.....MSG W. HEGERTY.....G2C63 48986 IASSG-AMC
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 Engr Div.....(vacant).....4S06 48920 AMCQA-E

MISCELLANEOUS

Ambulance
 Duty hrs, call Clinic.....1S51.....9-911/48296
 After duty hrs, call Guard.....Lobby.....9-557-1144
 Clinic (Civ Emp Health Svc).....1S51.....48296
 Conference Room Scheduling.....2C45.....48485
 Credit Union.....Lobby.....9-823-5211
 Dining Facility (Exec).....10N53.....49569
 DOD Bldg Manager.....1S34.....48100
 DOIM Info Center.....1N57.....49333
 Driver Service.....2W17.....48492
 Fitness Center.....9-751-7330
 Forms Mgt Ofc.....G3C25.....48060
 Graphics.....1C22.....48490
 Graphics Self-Service.....1N27.....48491
 Guard.....Lobby.....9-557-1144
 Learning Resource Ctr (LRC)
 & Education Ctr.....1S09.....48213
 Library.....7S35.....48152
 Admin Pubs.....45816
 Locator Svc (Civ Pers).....2S29.....49491
 Mailroom.....G2W07.....48693
 Operations Ctr (SDO) (Duty Hrs).....G2C60.....49223
 Parking/Towing (PMI).....Lobby.....9-685-4438
 Personnel Svc Ctr (Mil Pers).....1E06.....48151
 Photographic.....1C44.....48486
 Printing Section.....G2C37.....49603
 Protocol Office.....10S50.....47853
 Receptionist.....Lobby.....49191
 Reservations (GELCO Trav Svc).....9-762-8180
 Security Office.....1N58.....49141
 Special Security Command, AMC.....G2C63.....48986
 Stockroom (JDSSW/SLA Ofc Sup).....G2C31.....45885
 (Pink/Blank Forms).....G3C19.....49663/4

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 AMCPD-AL-CF
 AMXDO-SP
 AMXDO-SV
 AMXDO-SV

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 AMCPD-L

AMXIS-PR
 AMXDO-SM
 AMCO

AMXIS-AM
 ASNV-OPSD-A P
 AMXDO-SP
 AMCPD

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 AMCO

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 Asst DCS.....
 XO.....
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 AG/Com Actvs Div.....
 Civ Pers Div.....
 Provost Marshal.....
 Mil Pers Div.....
 Cmd Reenl Ofc.....

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 Marine Corps.....
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 SA, Enlisted Adviser.....

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Asst DCS.....	(vacant).....	2E14 48195	AMCPE
XO.....	LTC W. LORD.....	2E14 48195	AMCPE-X
Plans & Oper Ofc.....	MS B. CRABTREE.....	2E18 48421	AMCPE-P
Ag/Com Actvs Div.....	COL D. WINKLER.....	1N12 48520	AMCPE-A
Civ Pers Div.....	MR K. MORRIS.....	2U20 49167	AMCPE-C
Provost Marshal.....	COL D. PRICE.....	10N34 49033	AMCPE-S
Mil Pers Div.....	COL C. HOUSTON.....	2S56 49325	AMCPE-M
Cnd Reenl Ofc.....	SGM O. JOHNSTON, JR.....	2E22 45076	AMCPE-MR

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Inst Logistics LNO.....	MR R. H. BALLINGER.....	5N14 49899	AMCEN-P
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Gen Intel Spt Div.....	MR A. MCGREGOR.....	G2C63 45714	AMCMI-FT
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Security Pol Div.....	(vacant).....	1E22 49066	AMCMI-CS
Tech Security Div.....	MR R. VALIMAKI.....	1E18 47016	AMCMI-CT
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Prog Dev Div.....	MR E. CURLE.....	4S30 49116	AMCAE-HD
Prog Eval Div.....	MRS M. MINOR (acting).....	4S44 49165	AMCAE-PE
Info Res Mgt Div.....	MR H. JARRELL.....	4S39 49429	AMCAE-IR
AMC Sys Mgt Div.....	MR P. STERNBERG.....	4S25 49425	AMCAE-AS

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Canada.....	LTC W. BEWICK.....	10S44 49679	CLO
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XO.....	MAJ J.
SGM.....	SGM
Security & Eval Ofc.....	MR R
Admin Ofc.....	MS M
Sys Mgt & Integ Div.....	MS M
Operations Div.....	(vac)
Resource & Plans Div.....	MR E

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Admin Off.....	MS M
EO.....	MS L
Safety.....	MS R
Ops & Spt Div.....	MR J
Resources Br.....	MR P
Equip Mgt Br.....	MR H
Security Br.....	MS M
Mil Spt Div.....	CPT
Pers Svc Ctr.....	CPT
CG's Mess.....	CW3
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Resource Mgt Br.....	MS
Plans Br.....	MS
Logistics Br.....	(va
Ops & Sys Integr Div.....	MR
Sys Software Br.....	MR
Postal Br.....	MR
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Publishing Branch.....	MS
Telecommunications Ctr.....	MR
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PM/EO Mgr.....	
AMC Hispanic Empl PM.....	

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Commander the Cdr.....	MR J. L. L
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Plans & Security.....	COL J. T.
DCS for Sup, Maint,	
& Trans.....	MR W. WINE
DCS for Force Mod.....	MR J. FOLI
DCS for Resource Mgt.....	MR W. HARI
Staff Advisor for IM.....	MS J. WASI
Chief, LAO.....	COL W. D.
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.....	MAJ C. E. CRANK.....	4E16 48626	AMCIM-X
.....	SGM J. A. HILL.....	4N45 48366	ASNC-SM
& Eval Ofc.....	MR R. HARMON.....	4N43 49716	AMCIM-E
.....	MS M. E. LAPOINTE.....	4N51 49052	AMCIM-A
Integ Div.....	MS M. C. CARROLL.....	4N52 49140	AMCIM-S
s Div.....	(vacant).....	4E16 48627	AMCIM-O
& Plans Div.....	MR E. F. BRASSEUR.....	4E22 49480	AMCIM-R

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.....	MS M. SLAUGHTER.....	1E10 49412	AMXIS-O
.....	MS L. MILES.....	1S38 47744	AMXIS-E
.....	MS R. TAYLOR.....	2S40 49217	AMXIS-F
Int Div.....	MR J. MCCUTCHEON.....	2S40 49138	AMXIS-R
Br.....	MR P. VOZNIAK.....	2W18 49413	AMXIS-RB
Br.....	MR H. HAYNES.....	5C22 49061	AMXIS-RE
Br.....	MS M. COSBY.....	1N58 49141	AMXIS-RS
Div.....	CPT C. BECHTOLD.....	1E06 48150	AMXIS-A
Ctr.....	CPT L. F. CAMP.....	1E06 48150	AMXIS-AM
ol.....	CWS R. SMITH.....	10N53 49569	AMXIS-AD
.....	SSG D. LONG.....	2W17 48492	AMXIS-AC
Ofc.....	MR R. W. BROOKS.....	2S24 49427	AMXIS-P
s Br.....	MR V. KNOTT.....	2S36 49106	AMXIS-PR
ev Br.....	MR P. FERGUSON.....	2N07 49417	AMXIS-PT
Rel Br.....	MS M. THEUER.....	2S25 49495	AMXIS-PL
.....	MS B. HAGLE.....	2N29 49365	AMXIS-PC
Spt Grp.....	MS M. SLAUGHTER.....	1E10 49412	AMXIS-O
Flyer.....	MS M. SLAUGHTER.....	1E10 49412	AMXIS-O

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Plans, & Log Div.....	(vacant).....	3W15 48758	AMXDO-R
e Mgt Br.....	MS L. PIERPOINT.....	3W15 48758	AMXDO-RR
r.....	MS F. CLOHAN.....	3S06 49632	AMXDO-RP
cs Br.....	(vacant).....	3W17 49632	AMXDO-RL
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ware Br.....	MR F. BIEDERMAN.....	G3W09 48061	AMXDO-SS
Br.....	MR W. HARRIS.....	G2W07 48693	AMXDO-SM
Information Br.....	MR J. GOODMAN.....	1C22 48481	AMXDO-SV
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munications Ctr.....	MR W. H. DOLLAH, JR.....	G3C20 45450	AMXDO-SB
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lace Auto Br.....	MS E. HOWES.....	1N57 49333	AMXDO-IW
ations Prog Br.....	MR G. SIMS.....	1N57 49333	AMXDO-IA

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Federal Women's
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Hispanic Empl PM.....	MS A. A. ORTIZ.....	1S50 48115	AMCEE

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or Opns.....	AMXEU-CS
s & Security.....	COL J. T. WILLARD.....	Heidelberg 370-7810	AMXEU-O
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ans.....	MR W. WINDER.....	Heidelberg 370-7807	AMXEU-S
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n Off.....	MR K. KOSOWSKI.....	Yongsan AV 723-4074	AMXFE
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AO-FE.....	MR G. EMBREY.....	Yongsan AV 723-3857	AMXLA-FE
74th MNT BN.....	LTC R. D. NIDEL.....	Cp Market AV 722-3820	AMXTM-P

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 Y, JR.....7E06 48046 AMCCC
 NER.....7E06 48003 AMCCC-S
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 C, Budget Div.....MS M. A. NASON.....7W11 43313 AMCAM-BU
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 C, Production Div.....MR J. MYTRYSHYN.....7W17 45896 AMCAM-PD
 C, Logistics Div.....MR R. J. FAHY.....7N16 45537 AMCAM-LG
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 XO.....MAJ W. T. FLEMING (act).....9E06 48169 AMCPP-X
 ADCS f/Competition & Proc Mgt.....MR P. W. BEAUMONT (act).....9S48 43270 AMCPP-M
 Avn/Comm/Troop Spt Div.....MR J. BOZZARD (act).....9S51 48182 AMCPP-MA
 Competition Mgt Office.....MR R. H. KUHN.....9S46 45685 AMCPP-MC
 Msl/Lab/Depot Test Div.....MR G. W. REARDON.....9C44 49621 AMCPP-MM
 Veh/Munitions Div.....MR V. WHITE.....9S54 48340 AMCPP-MV
 ADCS for Procurement Opns.....LTC W. FRAZIER.....9N56 41961 AMCPP-O
 ADP Division.....MR A. D. DOUGLAS.....9N26 43169 AMCPP-OA
 Svc Spt Div-Admin.....MS A. E. ARRINGTON.....9E19 48170 AMCPP-OS-A
 Svc Spt Div-Career Prog.....MS S. SCHNEIDER.....3N13 48125 AMCPP-OS-C
 ADCS f/Proc, Pol, & Analysis.....MR T. MORAN.....9N56 48267 AMCPP-P
 Contr Adm/MSC Cmd Spt Div.....LTC H. P. DOPSON (act).....9N56 48270 AMCPP-PA
 Cost/Pricing Policy Div.....MR E. CORNETT.....9N40 48055 AMCPP-PC
 Contract Policy Div.....MR T. W. COLANGELO.....9N40 48304 AMCPP-PP
 Ofc of Contr Placement & Rvw.....MR T. MORAN.....9N56 48267 AMCPP-PR

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 C, Wash Ofc.....MAJ W. MORGAN.....5S32 49126 AMCPM-NGW

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AMCDS

DCS.....MG T. G. LIGHTNER.....5E22 48380 AMCDS
 Asst DCS.....MR P. DONOVAN.....5E22 48383 AMCDS

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Commander.....MG T. G. LIGHTNER.....5E22 48340 AMSAC
 Deputy.....MR P. DONOVAN.....5E22 48380 AMSAC-PD
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 ADC.....CPT D. KIRKLAND.....5E22 48380 AMSAC
 Admin Off.....MR S. CHARLES.....5E18 48385 AMSAC-SA
 Resource Manager.....MR C. KUDERNA.....4S52 43308 AMSAC-R
 Policy & Weapons Support Dir.....MR R. L. LUM.....5S42 48439 AMSAC-MP
 Ofc for Int Indus Coop.....MR D. LEACH.....5S10 48371 AMSAC-MI
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 Europe Directorate.....COL W. I. PARKS.....5S54 48399 AMSAC-ME
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 SA3 Prog Mgr.....MR D. MURDOMAKI.....4E13 44018 AMSAC-D
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 TRADOC, Washington Fld Ofc.....LTC J. HOWELL.....5W11 45965 ATFA-WFO

Commander.....	LTC A. BERG.....	G2C63	48986	IASSG-AMC
Operations Officer.....	MAJ K. WEBSTER.....	G2C63	48987	IASSG-AMC
NCOIC.....	MSG W. HEGERTY.....	G2C63	48986	IASSG-AMC
Secretary.....	(vacant).....	G2C63	48986	IASSG-AMC
Contractor Operations.....	MR H. WALLEN.....	G2C63	48534	IASSG-AMC

DEPUTY CHIEF OF STAFF FOR PRODUCT ASSURANCE & TESTING

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AMCQA

DCS.....	MR S. J. LORBER.....	4W22	48929	AMCQA
Asst DCS.....	MR J. L. STAHL.....	4W22	48925	AMCQA
Admin Off.....	MS L. SELZO.....	4S06	48912	AMCQA-A
Comp Svc.....	(vacant).....	4W08	49868	AMCQA-A
Sys Eval & Test Policy Div.....	COL R. W. BILLS.....	4W06	48690	AMCQA-S
Prod Qual Div.....	MR E. H. LESSER.....	4W20	48899	AMCQA-P
Engr Div.....	(vacant).....	4S06	48920	AMCQA-E

MISCELLANEOUS

Ambulance		
Duty hrs, call Clinic.....	1S51.....	9-911/48296
After duty hrs, call Guard.....	Lobby.....	9-557-1144
Clinic (Civ Emp Health Svc).....	1S51.....	48296
Conference Room Scheduling.....	2C45.....	48485
Credit Union.....	Lobby.....	9-823-5211
Dining Facility (Exec).....	10W53.....	49569
DOO Bldg Manager.....	1S34.....	48100
DOIM Info Center.....	1N57.....	49333
Driver Service.....	2W17.....	48492
Fitness Center.....		9-751-7330
Forms Mgt Ofc.....	G3C25.....	48060
Graphics.....	1C22.....	48490
Graphics Self-Service.....	1N27.....	48491
Guard.....	Lobby.....	9-557-1144
Learning Resource Ctr (LRC)		
& Education Ctr.....	1S09.....	48213
Library.....	7S35.....	48152
Admin Pubs.....		45816
Locator Svc (Civ Pers).....	2S29.....	49491
Mailroom.....	G2W07.....	48693
Operations Ctr (SPO) (Duty Hrs).....	G2C60.....	49223
Parking/Towing (PMI).....	Lobby.....	9-685-4438
Personnel Svc Ctr (Mil Pers).....	1E06.....	48151
Photographic.....	1C44.....	48486
Printing Section.....	G2C37.....	49603
Protocol Office.....	10S50.....	47853
Receptionist.....	Lobby.....	49191
Reservations (GELCO Trav Svc).....		9-762-8180
Security Office.....	1N58.....	49141
Special Security Command, AMC.....	G2C63.....	48986
Stockroom (JDSSW/SLA Ofc Sup).....	G2C31.....	45885
(Pub/Blank Forms).....	G3C19.....	49663/4
Telecommunications Ctr.....	G3C20.....	49009
Tickets, Pick-up (Gelco Trav).....	1E19.....	9-823-0951
Travel Office.....	1N06.....	48531
(CONUS).....	1N06.....	48529
(OCONUS).....	1N06.....	45309
Video Teleconferencing.....	1S06.....	44752/4
Westwood Mat Ofc.....	Lobby.....	9-751-5590

AMXDO-SV

AMXIS-AD

OSD/WHS

AMXDO-I

AMXIS-AC

AMCPE-AL-CF

AMXDO-SP

AMXDO-SV

AMXDO-SV

AMXIS-PT-LRC

AMCMP-L

AMXIS-PR

AMXDO-SM

AMCOC

AMXIS-AM

ASNV-OPSD-A P

AMXDO-SP

AMCPR

AMXIS-S

IASSG-AMC

JDSSW/SLA

AMXDO-SP

AMXDO-SB

AMCPE-AT

AMXIS-RB

AMCPE-AT

AMXDO-SV

ASSG-AMC
ASSG-AMC
ASSG-AMC
ASSG-AMC
ASSG-AMC

Info Res Mgt Div.....MR H. JARRELL.....4S39 49429 AMCAE-IR
AMC Sys Mgt Div.....MR P. STERNBERG.....4S25 49425 AMCAE-AS

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Australia.....	MAJ D. J. MURRAY.....	10S44 49676 ALO
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Canada.....	LTC W. BEWICK.....	10S44 49679 CLO
Germany.....	LTC H. MELCHER.....	10S38 49684 GELO
Marine Corps.....	MAJ P. A. LAMBERT.....	10S49 49673 AMCGS-F
DLA.....	LTC E. J. MOSCATELLI.....	9W14 48367 AMCGS-O
DESCOM.....	MRS D. B. STOKES.....	4N08 49647 AMCGS-D
AMC-EUR.....	MRS V. WISE.....	4N08 49648 AMXEU-E

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NA/AR

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Chief.....
AMC Federal
PM/EO Mgr..
AMC Hispanic

amxou-e@usadhq2

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Commander.....
Commander the ()
Deputy f taf
DCS for Opns,
Plans & Securi
DCS for Sup, Ma
& Trans.....
DCS for Force
DCS for Resourc
Staff Advisor 1
Chief, LAO.....
AMC-E LO.....

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Commander.....
Admin Off.....
Cdr, D-SAFE.....
C, LAO-FE.....
Cdr, 74th MNT BN

Staff Duty Officer:
AUTOVON: 284-9223
Commercial: 202-274-9223
Operations Center:
AUTOVON: 284-8406
Commercial 202-274-8406

Prepared by:
DOIM (USAISC-Alexandria)
US Army Materiel Command
AUTOVON: 284-8158
Commercial: 202-274-8060/8158
Cable Address: CDRAMC ALEX VA

AMCQA

AMCQA
AMCQA
AMCQA-A
AMCQA-A
AMCQA-S
AMCQA-P
AMCQA-E

DO-SV

IS-AD
/WHS
DO-I
IS-AC
PE-AL-CF
DO-SP
DO-SV
DO-SV

IS-PT-LRC
IP-L

S-PR
IO-SM
IC

S-AM
-OPSD-A P
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R

S-S
G-AMC
W/SLA
D-SP
D-SB

E-AT
S-RB
E-AT
D-SV

OFFICE OF EQUAL OPPORTUNITY

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AMCEE

Chief.....MS J. L. PENDARVIS.....1S50 49003 AMCEE
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 PM/EO Mgr.....MR R. D. SHANKS.....1S50 48111 AMCEE
 AMC Hispanic Empl PM.....MS A. A. ORTIZ.....1S50 48115 AMCEE

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AMXEU-E

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 Commander the Cdr.....MR J. L. LOWMAN.....Heidelberg 370-8431 AMXEU-CG
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 DCS for Opns,
 Plans & Security.....COL J. T. WILLARD.....Heidelberg 370-7810 AMXEU-CS
 DCS for Sup, Maint,
 & Trans.....MR W. WINDER.....Heidelberg 370-7807 AMXEU-S
 DCS for Force Mod.....MR J. FOLK (acting).....Heidelberg 370-7758 AMXEU-F
 DCS for Resource Mgt.....MR W. HARRIS.....Heidelberg 370-8576 AMXEU-R
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 Chief, LAO.....COL W. D. PYBUS.....Heidelberg 370-8888 AMXLA-E
 AMC-E LO.....MRS V. WISE.....Rm 4N08 284-9647 AMXEU-E

HQ, AMC-FAR EAST

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AMXFE

Commander.....COL J. D. MILLER.....Yongsan AV 723-4074 AMXFE
 Admin Off.....MR K. KOSOWSKI.....Yongsan AV 723-4074 AMXFE
 Cdr, D-SAFE.....LTC D. B. BYTHER.....Cp Market AV 722-3850 AMXFE
 C, LAO-FE.....MR G. EMBREY.....Yongsan AV 723-3857 AMXLA-FE
 Cdr, 74th MNT BN.....LTC R. D. NIDEL.....Cp Market AV 722-3820 AMXTM-P

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Chief.....MR D. N. TARAS.....

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Joint Activities.....MR J. H. LASTER.....

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Chief.....COL J. LaBOUNTY.....

INTERNAL REVIEW AUDIT COMPLIANCE

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Chief.....MR M. G. ARTHUR.....

STAFF DIRECTORY

1 DECEMBER 1988

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DE
AMCSF
RAS.....10N36 49475 AMCSF

IES
AMCJO
STER.....10S18 49694 AMCJO

SON OFFICE
AMCLL
UNTY.....10S32 48263 AMCLL

MPLIANCE OFFICE
AMCIR
RTHUR.....3S26 49020 AMCIR

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Asst DCS.....MR P. DONOVAN.....5E22 48383 AMCDS

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TRADOC, Washington Fld Ofc...LTC J. HOWELL.....5W11 45965 ATFA-WFO